NEW HAMPSHIRE
DEPARTMENT OF ENVIRONMENTAL SERVICES
SHELLFISH PROGRAM: 2002 ANNUAL REPORT

June 2003

NH Department of Environmental Services
Water Division
Watershed Management Bureau

NEW HAMPSHIRE DEPARTMENT OF Environmental Services

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SHELLFISH PROGRAM: 2002 ANNUAL REPORT

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Cover: Tonging for Oysters, Adams Point, Great Bay Estuary (NHDES Shellfish Program photo)

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INTRODUCTION AND PURPOSE OF REPORT

The New Hampshire Department of Environmental Services (NHDES), under the authority granted by RSA 143:21 and 143:21-a, is responsible for classifying shellfish growing waters in the State of New Hampshire. The purpose of conducting shellfish water classifications is to determine if growing waters are safe for human consumption of molluscan shellfish. NHDES uses a set of guidelines and standards known as the National Shellfish Sanitation Program (NSSP) for classifying shellfish growing waters. These guidelines were collaboratively developed by state agencies, the commercial shellfish industry, and the federal government in order to provide uniform regulatory standards for the commercial shellfish industry. The NSSP is used by NHDES to classify all growing waters, whether used for commercial or recreational harvesting, because these standards provide a reliable methodology to protect public health. Furthermore, RSA 485-A:8 (V) states that "Those tidal waters used for growing or taking of shellfish for human consumption shall, in addition to the foregoing requirements, be in accordance with the criteria recommended under the National Shellfish Program Manual of Operation, United States Department of Food and Drug Administration."

This document represents the third Annual Report of the NHDES Shellfish Program. The preparation of an Annual Report serves two purposes. The first is to comply with the NSSP requirement for an annual review of growing area classifications. The second is to report to the citizens of the State of New Hampshire on the activities and accomplishments of the NHDES Shellfish Program, to describe water quality status and trends in shellfish growing areas, and to outline future activities to improve water quality and expand harvesting opportunities.

PROGRAM ACTIVITIES AND ACCOMPLISHMENTS

Monitoring Programs

Routine Monitoring

The NHDES maintains a routine shellfish water-monitoring program in all tidal waters in the State of New Hampshire. The focus of this program is to collect and test water samples for fecal coliform bacteria, which is used as an indicator of contamination from human or animal waste. Data generated by this program are used to annually review shellfish water classifications. Seventy-three stations in the Great Bay Estuary (including the Piscataqua River), Little Harbor/Back Channel, Rye Harbor, the Atlantic Coast, and the Hampton/Seabrook Estuary were sampled on a monthly basis for most of the year in 2002. Almost 750 samples (56 sampling runs) were collected in 2002, in accordance with the Systematic Random Sampling Strategy described in the NSSP. Application of this strategy was modified in 2002, per USFDA recommendation, to ensure randomization of sample collection with respect to tide stage. This differs from past monitoring efforts, which almost exclusively focused on low tide sampling. Figures 1-5 depict growing areas and sampling stations, while Appendix 1 lists current classification and acreages for all growing waters. Water quality in areas currently open to harvesting is generally good, although some sites show rainfall-related impacts that require management on a conditional basis. The 2003 routine shellfish water-monitoring program will be conducted in a manner similar to the 2002 program. Results from the

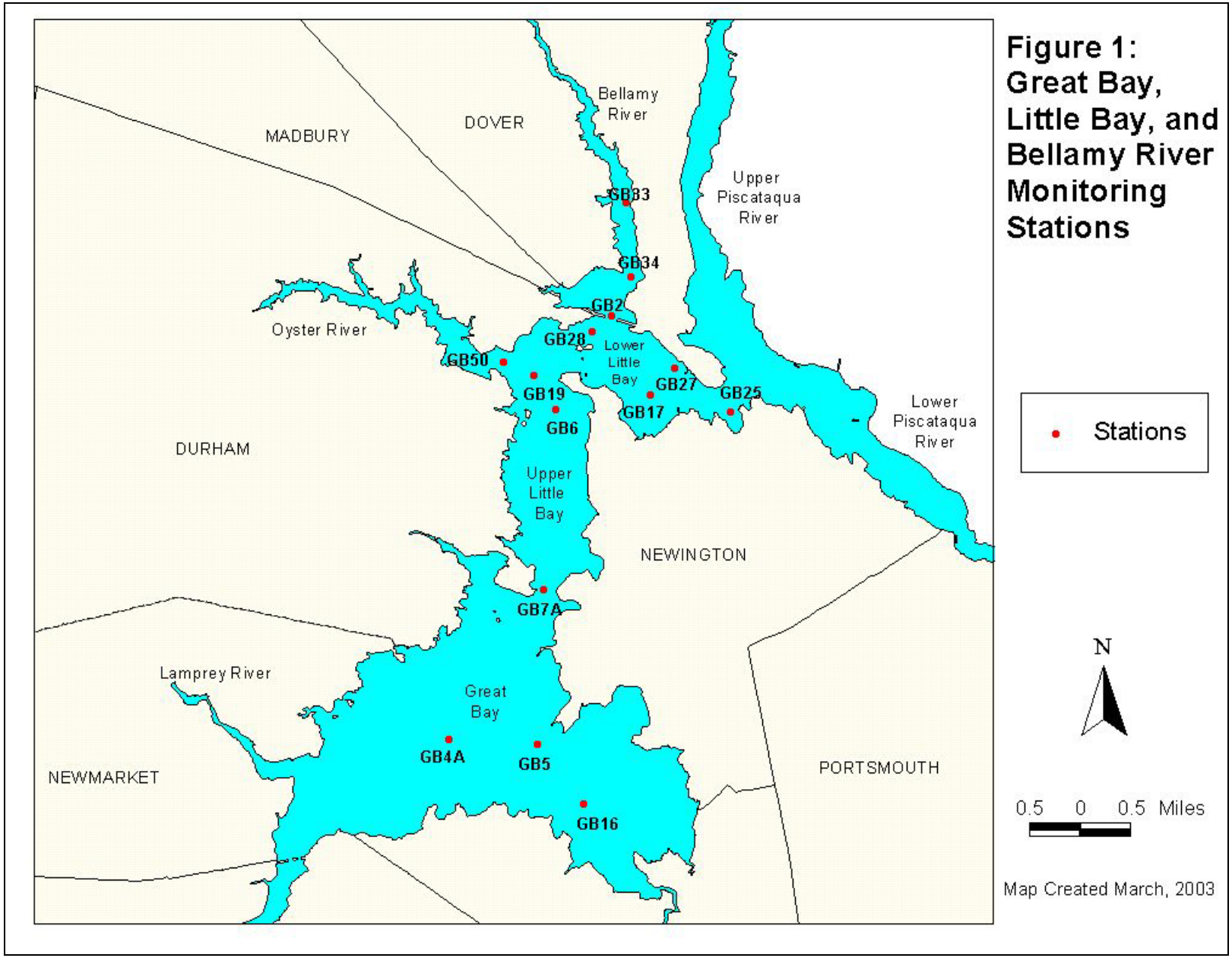
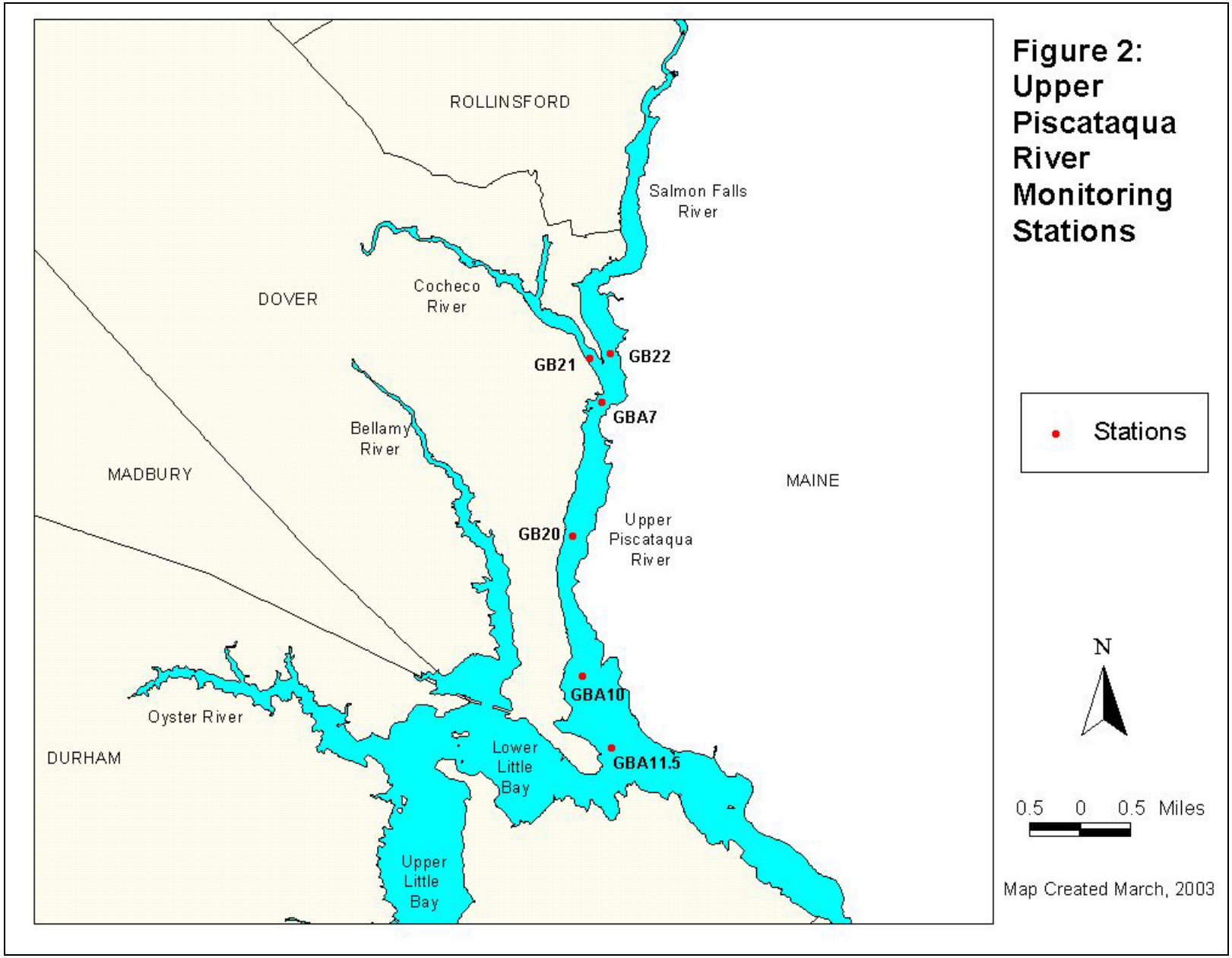
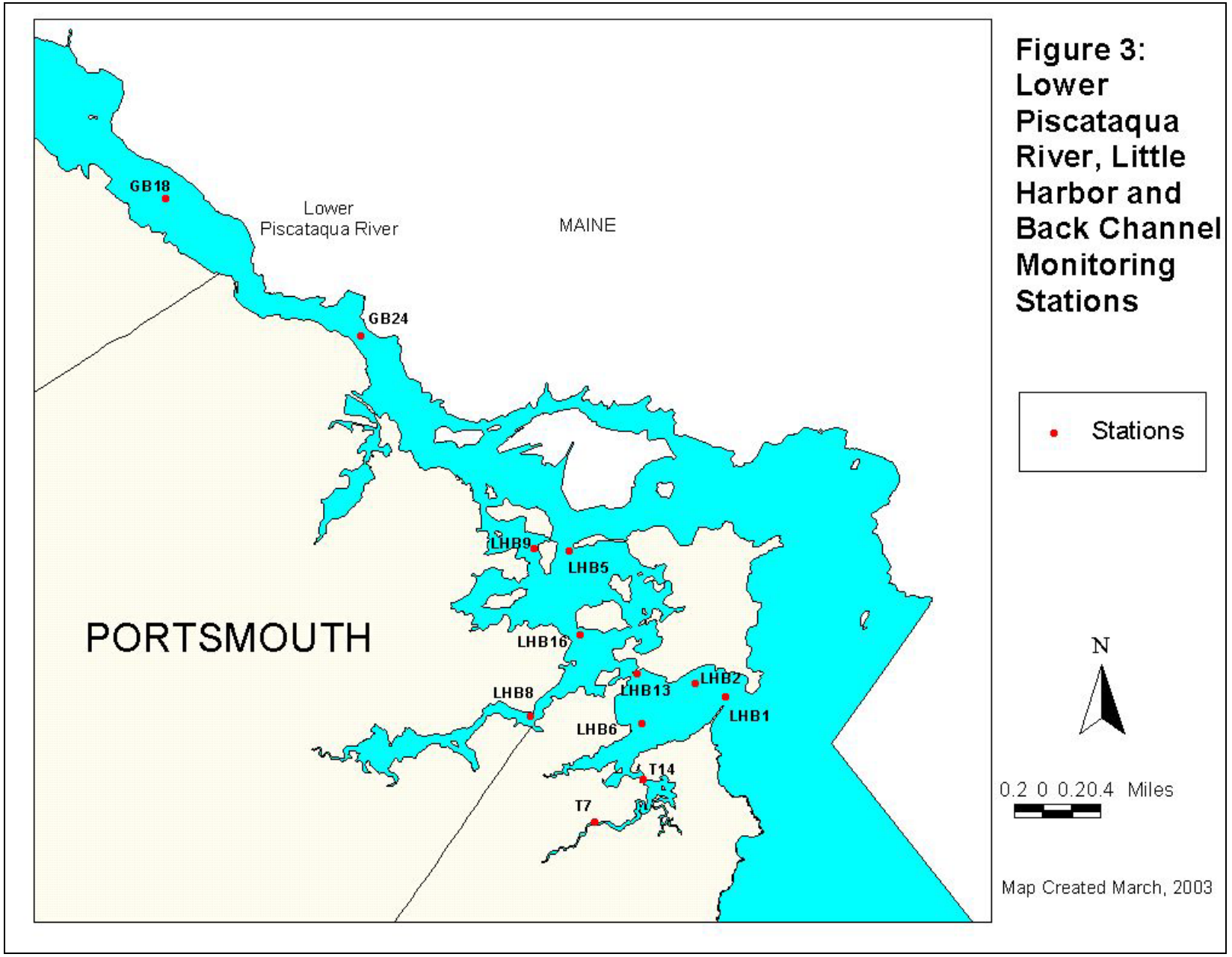


Figure 1:
Great Bay, Little Bay, and Bellamy River Monitoring Stations
MADBURY
DOVER
Bellamy River
Upper Piscataqua River
GB33
GB34
GB2
GB28
Lower Little Bay
Oyster River
GB50
GB19
GB27
GB25
GB17
GB6
Lower Piscataqua River
DURHAM
Upper Little Bay
NEWINGTON
GB7A
Lamprey River
Great Bay
GB4A
GB5
NEWMARKET
PORTSMOUTH
GB16
Stations
N
0.5 0 0.5 Miles
Map Created March, 2003


ROLLINSFORD
Salmon Falls River
DOVER
Cocheco River
GB21
GB22
GBA7
Bellamy River
MADBURY
MAINE
GB20
Upper Piscataqua River
GBA10
Oyster River
DURHAM
Lower Little Bay
GBA11.5
Upper Little Bay
Figure 2: Upper Piscataqua River Monitoring Stations
Stations
N
0.5 0 0.5 Miles
Map Created March, 2003


GB18
Lower
Piscataqua River
MAINE
GB24
LHB9
LHB5
PORTSMOUTH
LHB16
LHB8
LHB13
LHB2
LHB1
LHB6
T14
T7
Figure 3:
Lower
Piscataqua
River, Little
Harbor and
Back Channel
Monitoring
Stations
Stations
N
0.2 0 0.20.4 Miles
Map Created March, 2003

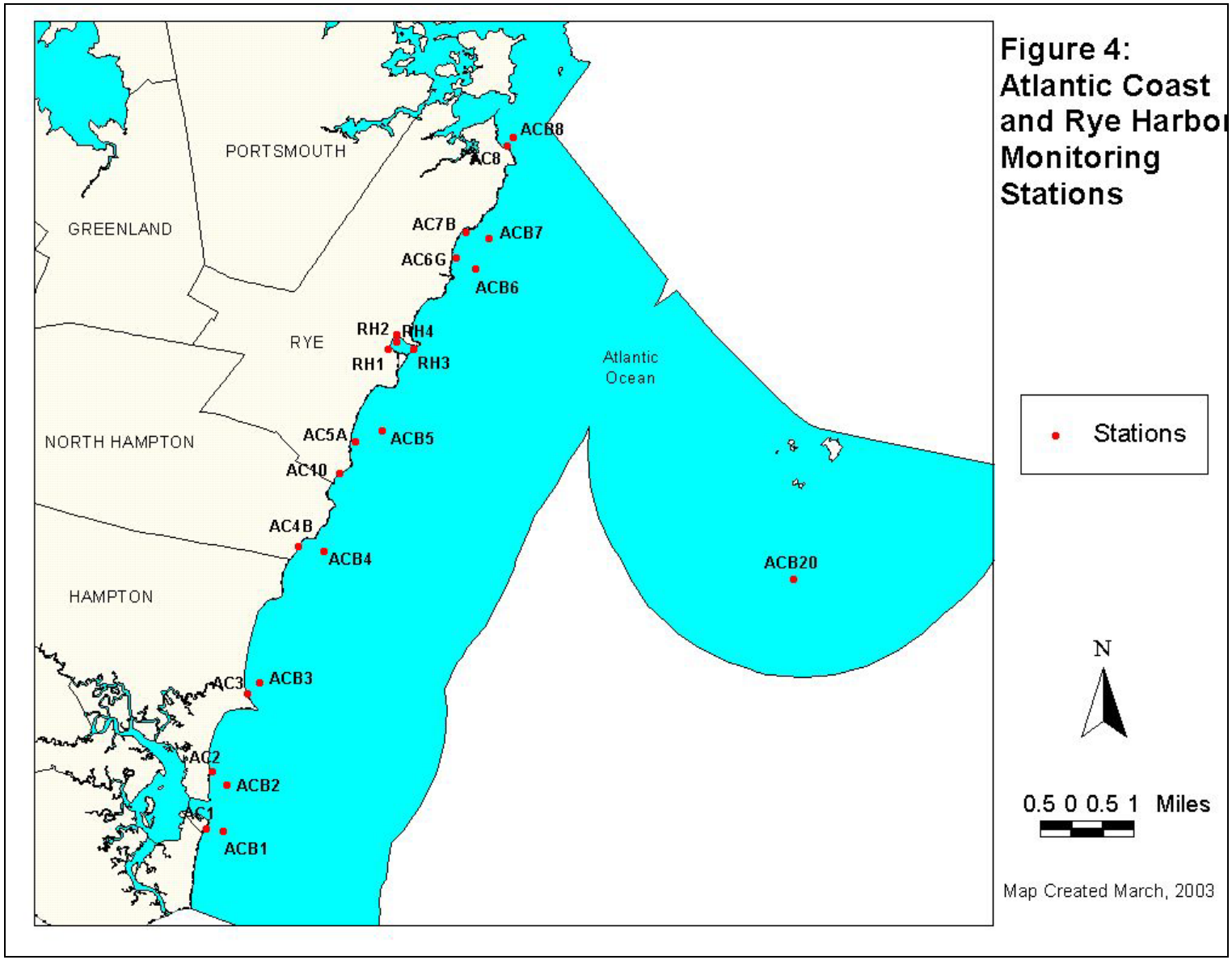
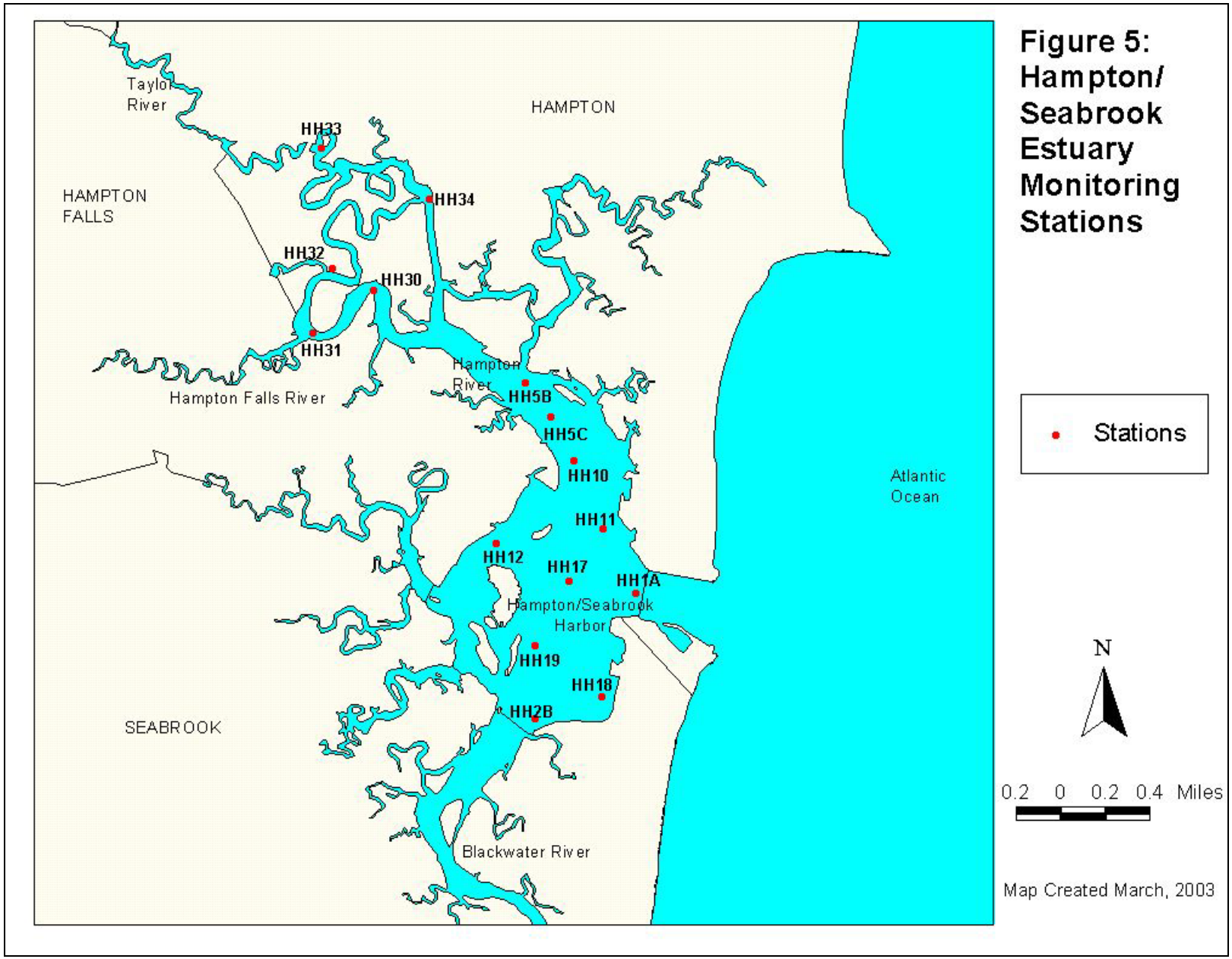


Figure 4: Atlantic Coast and Rye Harbor Monitoring Stations


Taylor River
HAMPTON
HH33
HAMPTON FALLS
HH34
HH32
HH30
HH31
Hampton River
Hampton Falls River
HH5B
HH5C
HH10
Atlantic Ocean
HH11
HH12
HH17
HH1A
Hampton/Seabrook Harbor
HH19
HH18
HH2B
SEABROOK
Blackwater River
Figure 5: Hampton/ Seabrook Estuary Monitoring Stations
Stations
N
0.2 0 0.2 0.4 Miles
Map Created March, 2003

routine monitoring program are reviewed in the "Update of Growing Area Classifications" section of this report.

Paralytic Shellfish Poisoning Monitoring

The waters of the Gulf of Maine are prone to "blooms" of phytoplankton that can produce potent neurotoxins, and filter-feeding shellfish can accumulate concentrations of these toxins such that the shellfish themselves become a public health threat to consumers. For this reason, the NHDES maintains a biotoxin-monitoring program, focused on the toxin that causes Paralytic Shellfish Poisoning (PSP). The 2002 monitoring program included weekly sampling of blue mussels from Hampton/Seabrook Harbor for the period of April through October, as well as May through September sampling at Star Island, Isles of Shoals. A total of 49 samples were collected in 2002. Weekly testing showed nearly all samples to have toxin levels of <44 micrograms toxin/100 grams edible tissue, well below the 80-microgram/100 gram level that warrants closure of areas to harvesting. The Star Island sample from 5/29/02 showed a slightly elevated PSP level (46.23 micrograms toxin/100 grams edible tissue), but subsequent samples from that and other sites showed levels below 44 micrograms/100grams tissue. No PSP closures of New Hampshire waters were instituted in 2002.

Pollution Source Identification

In 2002, new efforts to identify pollution sources that affect shellfish growing waters were focused on the Cocheco River, the Salmon Falls River, the Upper Piscataqua River, and the lower portion of the Oyster River. 2001 sampling of potential sources in Great Bay, Little Bay, the Bellamy River, and in the Hampton/Seabrook Estuary was continued in 2002.

Of the 73 properties included in the Cocheco River shoreline survey, 39 are residential, three are commercial, one is vacant, one is a marina, and the rest are a variety of other land uses. Sampling of 58 potential pollution sources under dry weather conditions was done on 7/23/02 and 7/30/02. Sampling under wet weather conditions will be pursued in 2003.

Of the 42 properties included in the Salmon Falls River shoreline survey, 24 are residential, two are commercial, 13 are vacant, and the rest are a variety of other land uses. Sampling of seven potential pollution sources under dry weather conditions was done on 7/22/02 and 7/29/02. Sampling under wet weather conditions will be pursued in 2003.

Of the 102 properties included in the Upper Piscataqua River shoreline survey, 85 are residential, three are commercial, 10 are vacant, one is a marina, and the rest are a variety of other land uses (including one wastewater treatment facility). Sampling of 24 potential pollution sources under dry weather conditions was done on 7/22/02 and 7/29/02. Sampling under wet weather conditions will be pursued in 2003.

Of the 20 properties included in the shoreline survey for the lower Oyster River, 16 were residential, three were vacant, and one was a wastewater treatment facility. Sampling of 12 potential pollution sources was done on 7/1/02 (dry weather), as well as on 9/4/02 and 9/16/02 (wet weather).

In the Hampton/Seabrook Estuary, pollution source identification efforts primarily consisted of targeted wet weather sampling as part of a Total Maximum Daily Load (TMDL) study, designed to identify the pollution sources that contribute the greatest bacterial load to the harbor. Sampling of approximately 25 stormwater pipes and streams was conducted on 7/23/02 and 10/16/02, after rainfall events of approximately 0.30 and 1.50 inches, respectively. Pre-storm, first flush, and subsequent hourly sampling of all sources was conducted to determine which pipes exhibited the greatest load to the shellfish growing waters of Hampton/Seabrook Harbor. The results will be used in a final TMDL report, to be issued by the NHDES Watershed Management Bureau, which will recommend remedial action on the most significant sources.

NHDES Watershed Management Bureau staff Ken Edwardson measuring flow from a stormwater pipe in Hampton/Seabrook (NHDES TMDL Program photo)

Sanitary Surveys

Little Harbor, Hampton Falls River, and Taylor River

In December 2001, a sanitary survey for the Little Harbor/Back Channel area was published. This report opened nearly 200 acres of shellfish waters in Little Harbor on a conditional basis, with conditions relating to weather, season, nearby wastewater treatment plant performance, and other factors. In April 2002 a sanitary survey for the Hampton Falls and Taylor River was issued, opening an additional 87 acres of waters for harvesting on a conditional basis. Openings for each area were slated for the weekend of April 26 and 27, 2002; however, a series of rainfall events delayed the openings. The Little Harbor area was first opened for harvest on May 11, 2002, while the Taylor and Hampton Falls rivers remained closed until May 24, 2002.

Oyster River

At the request of some commercial fishermen and University of New Hampshire researchers engaged in an oyster aquaculture demonstration project, the NHDES Shellfish Program initiated a sanitary survey for the lower Oyster River in the spring of 2002. This aquaculture demonstration project was utilizing the mouth of the Oyster River to raise cultured oysters; however, harvesting shellfish in the Oyster River itself was illegal because the growing waters had been unclassified for a number of years. NHDES conducted a shoreline survey of properties along the river, enhanced ambient water quality monitoring, collection of hydrographic information, and a dye/dilution study of the Durham wastewater treatment facility in the spring, summer, and fall of 2002. A draft sanitary survey report was issued in the winter of 2003, with final publication expected in spring 2003. The report recommends that most of the Oyster River should be classified as a Prohibited/Safety Zone due to presence of a (Town of Durham) wastewater treatment plant outfall. The report also notes that current conditions would permit the mouth of the river to be opened on a conditional basis, although this status could change if alterations to the plant operations, or amendments to National Shellfish Sanitation Program guidelines, become realities.

NHDES Shellfish Program intern Deb Zdankiewicz collecting temperature and salinity data for the Oyster River sanitary survey (NHDES Shellfish Program photo)

Great Bay, Little Bay, and the Bellamy River

Sanitary surveys for Great Bay, Little Bay, and the Bellamy River were initiated in 2001. Work for 2002 was to include completion of wet weather pollution source sampling, source evaluation, and drafting of sanitary survey reports. The lack of wet weather and changes in program

staff in the summer of 2002 required the suspension of all work in these areas until 2003. Although the pollution source surveys were suspended, progress was made in the spring and fall on other aspects of the work, including expanded rainfall and tidal stage sampling.

Hampton/Seabrook Harbor

Work to rewrite a sanitary survey for the Hampton/Seabrook Harbor in 2002 focused on documenting an appropriate rainfall closure threshold. Thresholds established by a 1998 Department of Health and Human Services survey (0.10" rainfall in November, April, and May, and 0.25" in December, January, February, and March) remained in effect; however, continued wet weather data collection indicates that a change is warranted. Current data supports implementation of a 0.25" closure criterion for the entire November-May harvesting season, and this change was implemented on 1/1/2003. Continued data collection, which will be conducted (weather permitting) in the spring/summer of 2003, may lead to an even higher threshold. Publication of a revised sanitary survey is targeted after this additional wet weather sampling is completed.

Other Activities

Marina Surveys

During the summer of 2002, NHDES Shellfish Program and Watershed Management Bureau staff updated and expanded a database on coastal New Hampshire marinas. Among the information collected were number of slips and boats, types of maintenance operations performed, sewage disposal facilities available, and others. These data will be used by the NHDES Shellfish Program to assess risk of boat sewage contamination, which will be incorporated into future sanitary surveys as applicable.

Wastewater Treatment Facility Dye Studies

The NSSP calls for the establishment of permanently closed "safety zones" around all wastewater treatment plant outfalls. These zones not only serve as "buffers" for relatively minor difficulties in wastewater treatment (e.g., occasionally elevated bacterial levels in plant effluent relative to discharge permit limitations), but also serve to protect harvesters from shellfish that may be contaminated by more serious plant failures (e.g., malfunction of disinfection systems). These safety zones are sized to cover the area that would be contaminated by a serious plant failure during the period of time required for plant operators to discover the problem and notify state authorities, and the time required for state authorities to institute an emergency closure of shellfish harvesting areas. Factors such as plant discharge volume and bacterial concentration, as well as current speeds and available dilution capacity of the surrounding waters, are key to properly sizing the closed safety zone. Dye/dilution studies are often utilized to gather accurate data on the dilution capacity and time of travel characteristics around a wastewater treatment plant outfall.

With the assistance of the EPA/Chelmsford Laboratory and the Town of Durham, NHDES conducted a dye/dilution study of the Durham wastewater treatment facility (WWTF) in November 2002. Plant operations were analyzed in the summer of 2002 in order to determine what type of WWTF failure should be modeled by the dye study. Rhodamine Wt dye was injected into post-chlorination plant effluent at high tide on 11/1/02. Dye concentrations and plume time of travel were tracked with fluorometers at several locations during the ebbing tide in the Oyster River and portions of Little Bay. A final report describing the study and recommending delineation of a Prohibited/Safety Zone around the outfall was published in February 2003.

NHDES and USEPA staff tracking dye in the Oyster River during a dilution/dispersion study of the Durham wastewater treatment facility effluent. Results of the study were used to delineate a "safety zone," closed for shellfish harvesting, around the facility outfall (USEPA photo)

FDA Certification

In recent years there has been a growing interest in the development of a commercial shellfish aquaculture industry in coastal New Hampshire. One of the obstacles facing those interested in developing shellfish aquaculture ventures in New Hampshire has been an inability to engage in interstate commerce, due to a lack of recognition of the state as a "shellfish-producing" state by the U.S. Food and Drug Administration. Commercial shellfish sanitation in the United States is regulated by state authorities, which voluntarily follow a uniform set of guidelines known as the National Shellfish Sanitation Program. States can voluntarily participate in this program, and compliance with the guidelines is checked by U.S. FDA. Compliant states are listed as such by FDA, and this compliance provides a level of confidence to other states that shellfish harvested or processed in another state is indeed safe for human consumption. New Hampshire has long been recognized as complying with these guidelines in the area of commercial processing, but a lack of staff to classify waters has precluded recognition as a shellfish producing state.

With the creation of a shellfish classification program within NHDES in 1999, the State of New Hampshire took a significant step toward becoming a nationally recognized shellfish-producing state. In 2000, NHDES Shellfish Program staff not only began documenting relevant information on its own classification program for submission to the U.S. FDA, but also volunteered to lead an effort with the NH Department of Health and Human Services and the NH Fish and Game Department to develop interagency Memoranda of Agreement for various aspects of NSSP implementation in New Hampshire. These MOAs are a critical part of New Hampshire's request for national recognition as well.

Draft documentation on New Hampshire's shellfish classification and regulatory programs, including five interagency Memoranda of Agreement, was submitted to US FDA in the spring of 2001. Comments on these draft materials were sent from FDA offices in Washington DC and Stoneham, MA in June and October 2001, respectively. NHDES addressed the FDA comments in final versions of all documents, and coordinated the signing of all five interagency MOAs in December 2001. All final documents were sent to FDA in January 2002. NH received written notification of program approval from FDA in February 2002.

Now that New Hampshire is nationally recognized as a "shellfish producing state," the implementation of the National Shellfish Sanitation Program by the NHDES Shellfish Program will be reviewed periodically by the U.S. Food and Drug Administration. The first such review focused on how NH regulates shellfish harvesting in and around marinas, and was done in September 2002. The resulting "Program Element Evaluation Report" from FDA found that the NHDES program meets the requirements of the NSSP Model Ordinance with respect to marina closure zones. FDA offered several recommendations with respect to regulation of areas adjacent to marinas and other classification issues, and NHDES continues to work toward full implementation of those recommendations. The next program evaluation for NHDES is scheduled for the spring of 2003.

Outreach Initiatives

The NHDES Shellfish Program continues to maintain a program website. This site (http://www.des.state.nh.us/wmb/shellfish) was largely developed to be of interest to the recreational harvester, and includes sections on Frequently Asked Questions, Maps of Open/Closed areas, Tide Tables, descriptions of ongoing NHDES monitoring programs, and other items. The site is periodically updated with new information as appropriate. The most significant addition to the website in 2002 was the addition of a section where program reports would be made available in "pdf" format. The 2001 Annual Report was made available through the website in summer 2002.

As had been the case in previous years, the NHDES Shellfish Program continues to involve citizen volunteers from the Great Bay Coast Watch in several aspects of the program. These include collection and transportation of mussel samples for PSP testing at Star Island, sampling of pollution sources in dry and wet weather, assistance in conducting ambient monitoring, and other activities. NHDES intends to continue to offer opportunities for volunteer involvement in 2003.

Quality Assurance Programs

A new element to the NHDES Shellfish Program in 2002 was the development and implementation of Quality Assurance Project Plans (QAPPs) for bacterial monitoring, Paralytic Shellfish Poison monitoring, and sanitary surveys. Each of these plans describes data collection methods, monitoring objectives, training needs, data review, documentation, management, and report, and other issues relative to the collection of environmental data. Ultimately, each QAPP outlines data collection such that the quality of the data generated by the monitoring program is of known quality, thus enabling potential data users to determine the degree to which the data suits their own needs.

Three QAPPs were developed by Shellfish Program staff and approved by EPA in 2002. The Water Quality Monitoring QAPP was approved on 5/28/02, the Paralytic Shellfish Poisoning Monitoring QAPP was approved on 6/3/02, and the Sanitary Survey QAPP was approved on 8/6/02. Implementation of a QAPP requires completion of tasks outlined in the document, and is an ongoing process. This section of the Annual Report is utilized to report on how each task in the three Shellfish Program QAPPs were addressed in 2002:

The Water Quality Monitoring QAPP stipulates:

- Annual Coordination meeting with key personnel: meeting was held on 2/22/02.
- Training in monitoring procedures, to be held at annual meeting of key personnel: procedures were reviewed at the annual meeting, but the most meaningful training (reviews of monitoring procedures) was done on an ongoing basis during sampling runs
- Maintenance of a list of trained personnel: list was maintained at the NHDES Pease field office.
- Sampling of all conditionally approved areas to occur at least 6 times per year: this was accomplished, as noted in Appendix 2.
- Calibration of equipment (thermometers): all thermometers were calibrated in January 2002. Identification tags with the calibration date were affixed to each thermometer.
- Preparation of quarterly reports: quarterly reports were submitted to the NH Estuaries Project, per conditions of an interagency agreement, on 4/22/02, 6/27/02, 9/27/02, and 12/30/02.

The Paralytic Shellfish Poisoning Monitoring QAPP stipulates:

- Weekly emails to appropriate lab and field staff to ensure coordination: this was done for the period of April through October.
- Monitoring of laboratory precision and establishment of new "CF" values as needed: Jayne Finnigan of the DHHS Public Health Laboratory confirmed that the laboratory maintained acceptable precision throughout the sampling period, with no new CF values needed.
- Documentation of the number of samples collected: 32 Hampton samples, 16 Star Island samples, and one Little Harbor sample.
- Reporting of all PSP Closures: none required in 2002.

The Sanitary Survey QAPP stipulates:

- Annual Coordination meeting with key personnel: meeting was held on 2/22/02.
- Training in monitoring procedures, to be held at annual meeting of key personnel: procedures were reviewed at the annual meeting, but the most meaningful training (reviews of monitoring procedures) was done on an ongoing basis during sampling runs.
- Documentation of training sessions held with volunteers: shoreline survey training for volunteers was held on 4/15/02. Additional training sessions for volunteers for related projects (pollution source sampling, flow measurement) were held on 6/18/02 and 6/25/02.
- Document growing areas for which sanitary surveys are under development: Hampton Falls River, Taylor River, Oyster River, Great Bay, Little Bay, Bellamy River, and Hampton/Seabrook Harbor.
- Calibration of equipment (thermometers): all thermometers were calibrated in January 2002. Identification tags with the calibration date were affixed to each thermometer. YSI meter was calibrated with each use, per manufacturer instructions.
- Verify that tidal and stratification data are of acceptable quality: All data were reviewed on the day after collection. For tidal studies, water temperature data were collected for five percent of the data collected, and all were within the +/- 1^{o}C target. For stratification studies, duplicate water temperature and salinity profiles were constructed for five percent of all profiles constructed, and all were within the target values of +/- 1^{o}C for water temperature, and +/-0.5 ppt for salinity.

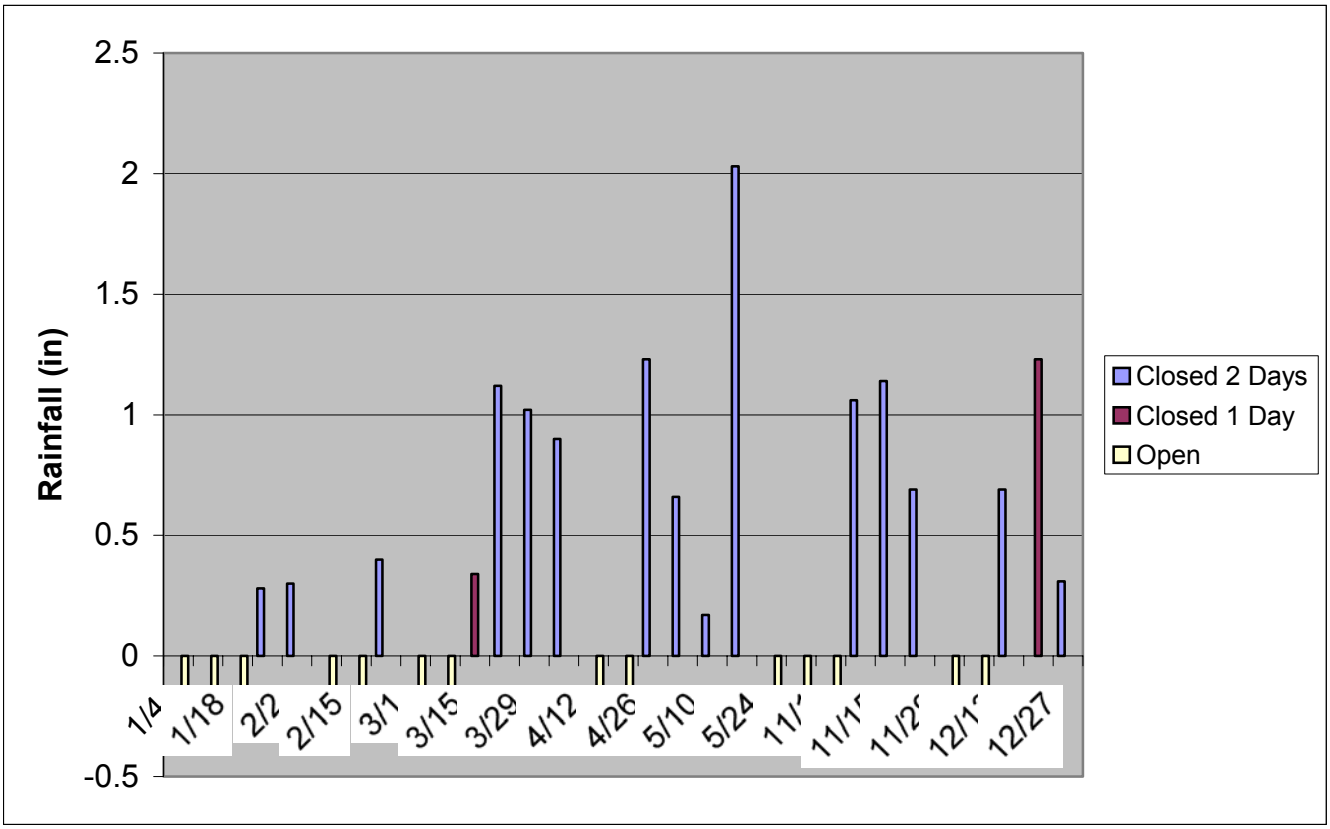
CLOSURES

Rainfall/Conditional Closures

In 2002, the only areas classified as "Conditionally Approved" were some sections of Hampton/Seabrook Harbor (note that portions of Little Harbor were opened late in the year). One of the conditions that drives the open/closed status of Hampton/Seabrook is rainfall-related. The most current sanitary survey allows harvesting for the period of November through May, and only if rainfall for the previous five days has not exceeded the threshold of 0.10" (or 0.25" for the months of December, January, February, and March). Figure 6 depicts the pattern of open/closed weekends for calendar year 2002. Blue bars represent weekends when the harbor was closed to harvesting due to rainfall for both weekend days. The size of the bar indicates the amount of rain that caused the closure. Red bars represent weekends when the harbor was closed for one of the two weekend days. Yellow bars depict weekends open for harvesting on both days.

Weather conditions in 2002 were relatively favorable for harvesting opportunities. Of the 61 days during the January-May and November-December open season in Hampton/Seabrook, 29 days (48%) were open for harvesting (38% and 52% in 2000 and 2001, respectively). Of the storms that caused a closure, many were over 0.50" of rainfall, which is much larger than the current 0.10"/0.25" criteria. Post rainfall sampling was conducted eight times during the year (109 samples) to evaluate rainfall effects on harbor water quality.

Figure 6: Hampton/Seabrook Rainfall Closures for 2002 Weekends



Emergency Closures

The only emergency closure implemented in 2002 occurred on 5/14/02, when the Town of Exeter reported a combined sewer overflow event of over 140,000 gallons following a rainfall event of over two inches. All open areas in Great Bay, Upper Little Bay, and Lower Little Bay were placed in the closed status. Water sampling on 5/15/02 showed high levels at some locations, so the closure was extended until additional samples collected on 5/19/02 showed acceptable water quality. The closure was lifted on 5/22/02.

Paralytic Shellfish Poisoning Closures

No closures due to Paralytic Shellfish Poisoning toxin were instituted in 2002.

Blue mussels collected from Star Island, Isles of Shoals. Mussels from Hampton Harbor are placed in plastic mesh cages, transplanted to Star Island, and collected weekly in the spring, summer, and fall for "red tide" testing. This sampling program is a cooperative effort among NHDES, the Isles of Shoals Steamship Company, the Star Island Corporation, and the volunteers of the Great Bay Coast Watch (NHDES Shellfish Program photo)

Seasonal/Marina Closures

Areas with large concentrations of boats (marinas, mooring fields) pose a seasonal risk of sewage contamination. Some of these marinas/mooring fields are adjacent to shellfishing areas that are available for harvest on a conditional basis. Prior to the fall of 2002, this contamination risk was managed by keeping the area closed until the month that most boats were typically hauled out for the season (November for Hampton/Seabrook, October for Little Harbor). Per FDA recommendation, this procedure was changed in the fall of 2002, when open/closed decisions were made based on weekly surveys of the actual number of boats present in or near a conditionally approved area. The scheduled November 2002 opening in Hampton was not delayed by the number of boats present, as a sufficient number of boats had been hauled out by 11/1/02. The scheduled October opening in Little Harbor was delayed, as the haul-out season ran longer than usual, with only half of the boats in the mooring field hauled out by mid-October. It was not until mid/late November before all boats were gone from the mooring field. By this time a sufficient number of boats remaining in the marina itself had been secured for the season, such that they no longer posed a sewage risk to the conditionally approved areas in Little Harbor. The seasonal closure in Little Harbor was scheduled to be lifted for the weekend of 11/22/02, but rainfall on 11/21/02 delayed the seasonal opening until 11/29/02.

UPDATE OF GROWING AREA CLASSIFICATIONS

The official list of all New Hampshire shellfish growing areas is presented in Appendix 1. Fecal coliform data used to calculate the NSSP statistics presented below are in Appendix 2. The reader should note that for most sites, only the most recent 30 samples in Appendix 2 were used for calculation of statistics. Furthermore, Appendix 2 also summarizes the rainfall and seasonal criteria applied to the data, which vary for different growing areas, for statistical calculations.

Great Bay

The Great Bay growing area includes 3032 acres of Approved waters, 742 acres of Restricted waters, and 442 acres of Prohibited waters (Figure 7).

NSSP statistics for Great Bay sites are presented in Table 1. Water quality data for these sites, which are all located in the Approved area, generally show low fecal coliform levels and indicate water quality that is consistent with the Approved classification. No changes to the areas classification were implemented in 2002. However, a review of water quality for individual storm events suggests that at some sites, the current three-inch rainfall threshold to trigger an "emergency closure" is probably too high, and should be lowered to 2.5 inches. This revision will be implemented at the start of 2003 and will be applicable to all growing waters in coastal New Hampshire.

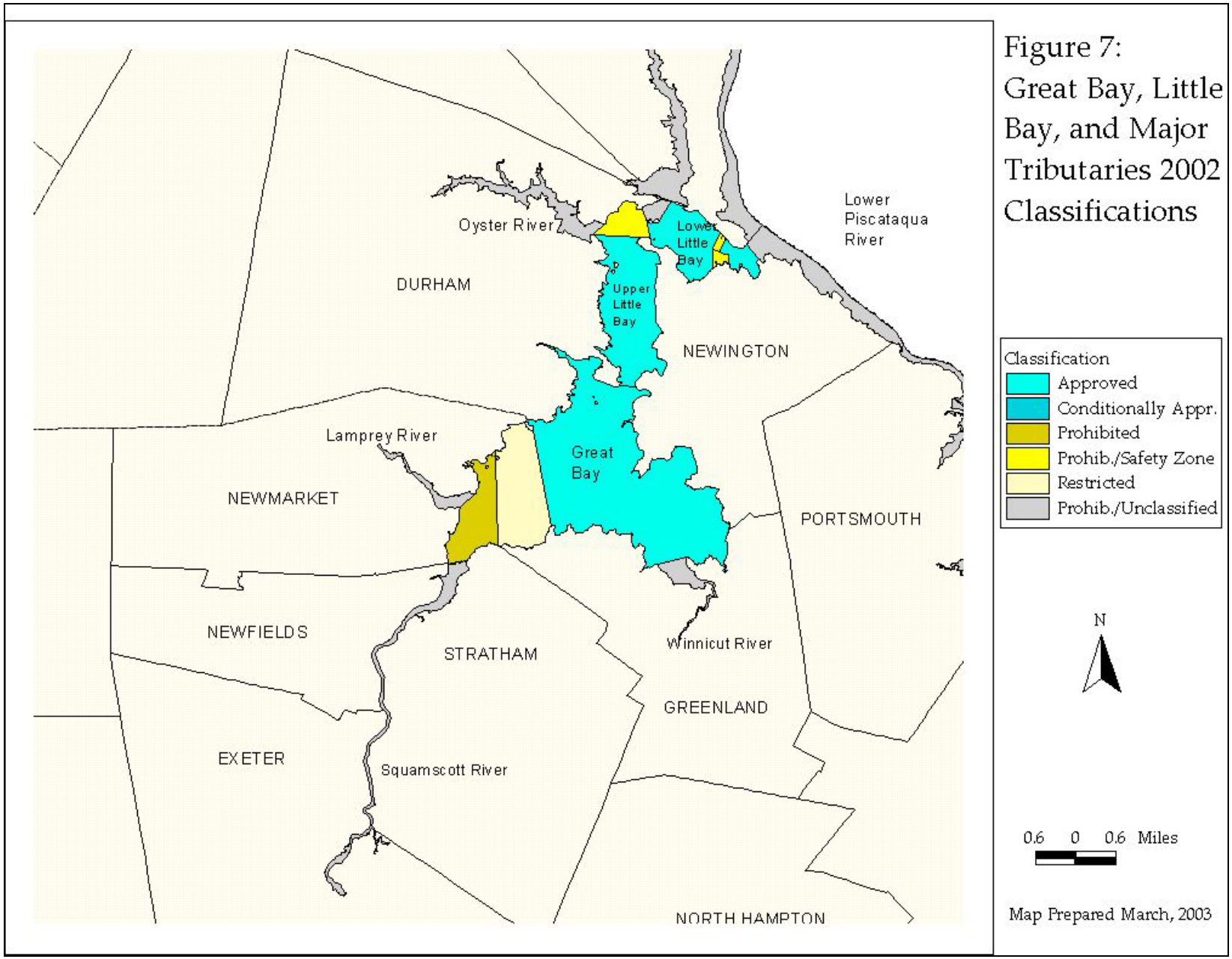
Table 1: NSSP Statistics for Stations in Great Bay
(Refer to Figure 1 for sampling site locations)

	GB16	GB4A	GB5
Count	30	30	30
Geomean	3.6	6.2	3.7
Est. 90th	10.9	27.2	12.9

Little Bay

The Upper Little Bay growing area (Figure 7) includes 1002 acres of Approved waters, while the Lower Little Bay growing area (Figure 8) includes 564 acres of Approved Waters, 52 acres of Prohibited/Unclassified waters, and 222 acres of Prohibited/Safety Zone waters associated with the Durham wastewater treatment facility, the Little Bay Boat Club, and Great Bay Marine, Inc. (178 acres, 16 acres, and 28 acres, respectively).

NSSP statistics for Little Bay sites are presented in Table 2. Water quality data for these sites, which, except for Sites GB19 and GB50, are all located in the Approved area, generally show low fecal coliform levels and indicate water quality that is consistent with the Approved classification. No changes to the areas classification were implemented in 2002. However, a review of water quality for individual storm events suggests that at some sites, the current three-inch rainfall


Oyster River
Lower Piscataqua River
Lower Little Bay
Upper Little Bay
DURHAM
NEWINGTON
Lamprey River
Great Bay
NEWMARKET
PORTSMOUTH
NEWFIELDS
STRATHAM
Winnicut River
GREENLAND
EXETER
Squamscott River
NORTH HAMPTON
Figure 7: Great Bay, Little Bay, and Major Tributaries 2002 Classifications
Classification
Approved
Conditionally Appr.
Prohibited
Prohib./Safety Zone
Restricted
Prohib./Unclassified
N
0.6 0 0.6 Miles
Map Prepared March, 2003

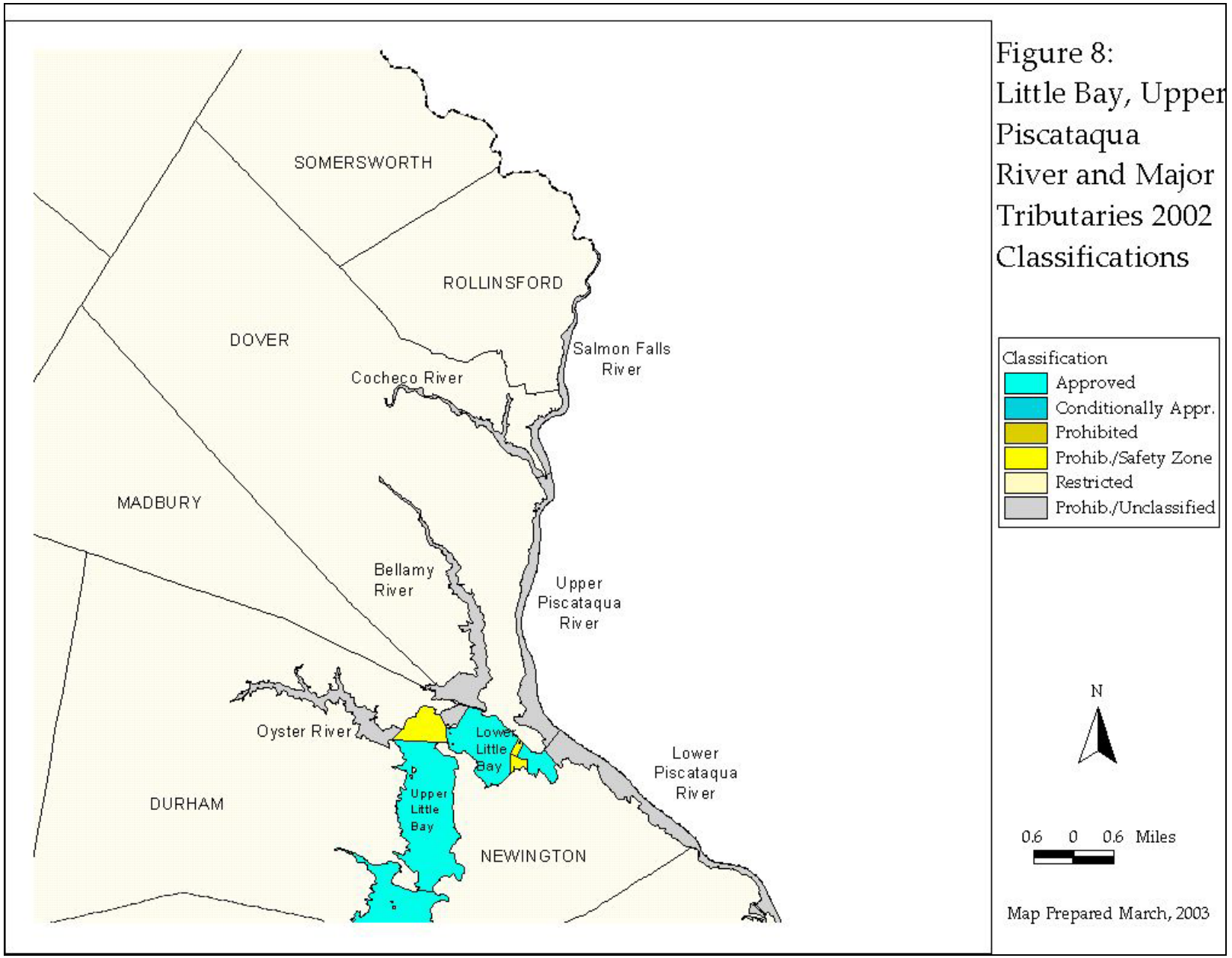


Figure 8:
Little Bay, Upper Piscataqua River and Major Tributaries 2002 Classifications

threshold to trigger an "emergency closure" is probably too high, and should be lowered to 2.5 inches. This revision will be implemented at the start of 2003 and will be applicable to all growing waters in coastal New Hampshire.

Table 2: NSSP Statistics for Stations in Little Bay
(Refer to Figure 1 for sampling site locations)

	GB25	GB27	GB28	GB17	GB19	GB50	GB6	GB7A
Count	30	30	30	30	30	30	30	30
Geomean	6.5	5.1	4.9	5.0	4.2	5.5	4.7	6.3
Est. 90th	28.2	24.3	18.5	19.8	20.2	25.8	15.7	29.8

The completion of a sanitary survey for the Oyster River in early 2003 will bring several substantial changes to the classification of Little Bay. With the exception of the previously-classified marina safety zones, all of Little Bay (including the northwest segment of Lower Little Bay that had been Prohibited/Unclassified) will be reclassified as conditionally approved, with the condition relating to proper operation and performance of the Durham wastewater treatment facility. Another condition will relate to the seasonal closures due to boat sewage concerns. Seasonal closures and reopenings, likely to occur in spring and fall, respectively, will be based on weekly surveys of numbers of boats capable of discharging sewage, and the capacity of the surrounding waters (e.g., safety zones) to dilute potential sewage discharges to safe levels.

Piscataqua River

The Upper Piscataqua River growing area stretches from the mouths of the Cocheco and Salmon Falls rivers to Dover Point and includes 813 acres of Prohibited/Unclassified Waters (Figure 8). The Lower Piscataqua River Growing Area stretches from Dover Point to the northwest corner of New Castle and the southeast corner of Seavey Island, and includes 1639 acres of Prohibited/Unclassified Waters (Figure 9).

NSSP statistics for Piscataqua River sites are presented in Table 3. Water quality data generally show high fecal coliform levels in the upper reaches of the river, with decreasing geometric means and measures of variability in the downstream direction. Work to complete a sanitary survey of the Upper Piscataqua River will continue in 2003. It is anticipated that at least some of the river around the Dover wastewater treatment plant outfall will become part of a Prohibited/Safety Zone. A dye study to enable delineation of this zone had been scheduled for 2003; however, ongoing maintenance to correct sediment plugging of the outfall's diffuser ports will likely require that the dye study be delayed until 2004.

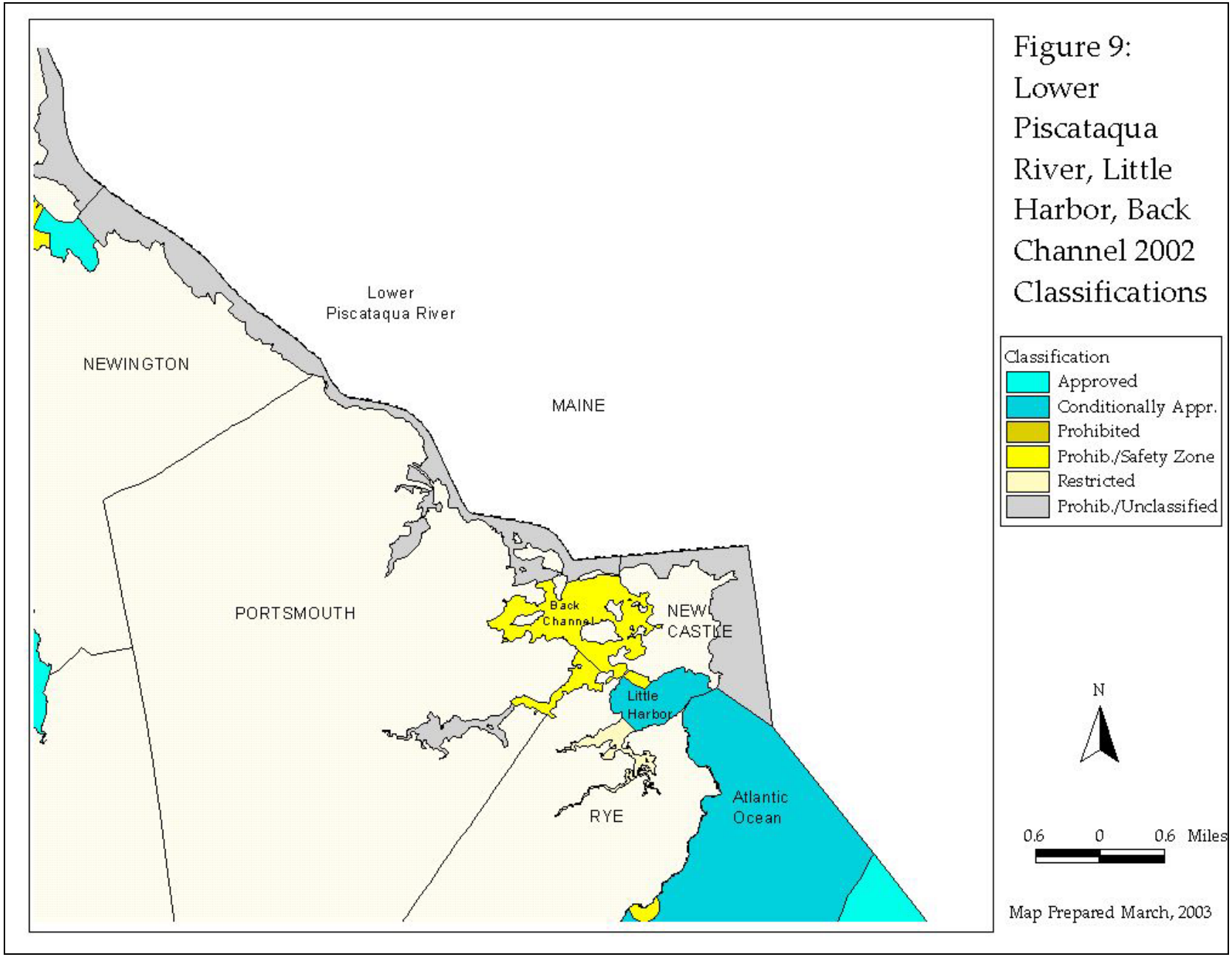

Lower
Piscataqua River
NEWINGTON
MAINE
PORTSMOUTH
Back
Channel
NEW
CASTLE
Little
Harbor
RYE
Atlantic
Ocean
Figure 9:
Lower
Piscataqua
River, Little
Harbor, Back
Channel 2002
Classifications
Classification
Approved
Conditionally Appr.
Prohibited
Prohib./Safety Zone
Restricted
Prohib./Unclassified
N
0.6 0 0.6 Miles
Map Prepared March, 2003

Table 3: NSSP Statistics for Stations in the Piscataqua River
(Refer to Figures 2 and 3 for sampling site locations)

	GB21	GB22	GBA7	GB20	GBA10	GBA11.5	GB18	GB24
Count	30	30	21	30	23	22	30	30
Geomean	47.1	22.5	35.8	21.2	13.8	7.2	5.0	8.8
Est. 90th	174.2	128.3	237.0	119.6	63.3	30.3	21.0	42.6

Bellamy River

The Bellamy River growing area stretches from the head-of-tide in Dover to the mouth of the River at the Route 4/Scammel Bridge (Figure 8). All waters in this 432-acre area are Prohibited/Unclassified.

NSSP statistics for Bellamy River sites are presented in Table 4. The highest and most variable fecal coliform levels are found in the upstream sites, with decreasing geometric means and measures of variability observed in the downstream direction. The only site that meets Approved criteria is Site GB2, located at the mouth of the river at the Scammel Bridge. It is possible that other sites could meet the Conditionally Approved classification with appropriate rainfall conditions, and a good deal of effort to complete a sanitary survey has been accomplished. Several pollution source identification and elimination efforts are either underway or completed in this river, including the completion of a sanitary sewer inflow/infiltration study by the City of Dover, an intensive NHDES/Watershed Assistance sampling effort in Varney Brook, and the extension of sewer lines and subsequent elimination of possibly failing septic systems along the lower Bellamy on Spur Road. Additionally, the NHDES Shellfish Program established a new ambient monitoring site (GB34), located between sites GB33 and GB2 off Clement Point. Water quality at this site is generally good except following moderate-to-heavy rainfall levels.

Before any areas can be considered for harvesting, a careful examination of municipal sewage collection infrastructure (pump stations, sewer lines, etc.) is needed to assess the risk of overflows and the City of Dover's ability to quickly detect and report these events. This examination will be conducted in 2003, with a decision on how to proceed with the sanitary survey to follow.

Table 4: NSSP Statistics for Stations in the Bellamy River
(Refer to Figure 1 for sampling site locations)

	GB33	GB34	GB2
Count	30	21	30
Geomean	10.7	7.0	4.7
Est. 90th	89.1	49.6	20.6

Little Harbor/Back Channel

The Little Harbor and Back Channel growing areas (Figure 9) were reclassified in December 2001 to include 512 acres of Prohibited/Safety Zone around the Portsmouth wastewater treatment plant outfall and Wentworth Marina, 93 acres of Restricted waters upstream of Sheafes Point, 198 acres of Conditionally Approved waters in Little Harbor, and 96 acres of Prohibited/Unclassified waters in Sagamore Creek upstream of the Route 1A bridge.

NSSP statistics for Little Harbor sites are presented in Table 5. Fecal coliform data in Little Harbor meet Conditionally Approved criteria (0.50-inch rainfall criterion, seasonal closures for boat sewage concerns). Seasonal closures for boat sewage had been implemented on a monthly basis as specified in the sanitary survey and management plan. Per FDA recommendation, this approach was modified in the fall of 2002 such that seasonal openings and closures are now based on weekly surveys of numbers of boats capable of discharging sewage, and the capacity of surrounding waters to dilute potential discharges to safe levels. In the case of Little Harbor, the conditionally approved area is closed when the numbers of boats likely to be capable of discharging sewage exceeds the dilution capacity of the permanently closed safety zone delineated around the marina.

Table 5: NSSP Statistics for Stations in Little Harbor
(Refer to Figure 3 for sampling site locations)

	LHB1	LHB2	LHB13	LHB6	T14	T7
Count	30	30	30	30	30	30
Geomean	2.7	4.0	5.1	4.7	12.9	21.2
Est 90th	6.3	13.3	17.6	15.5	68.9	138.0

NSSP statistics for Back Channel sites are presented in Table 6. Fecal coliform data generally meet Conditionally Approved criteria at some sites, although the 2001 sanitary survey classifies all of Back Channel as part of a Prohibited/Safety Zone for the Portsmouth wastewater treatment facility.

Table 6: NSSP Statistics for Stations in Back Channel
(Refer to Figure 3 for sampling site locations)

	LHB8	LHB16	LHB9	LHB5
Count	30	30	30	30
Geomean	5.0	7.3	10.9	4.0
Est 90th	17.0	32.6	63.7	13.0

Atlantic Coast

The Atlantic Coast growing area extends to the three-mile limit under the state's jurisdiction and includes the New Hampshire waters around the Isles of Shoals (Figure 10). The growing area includes 12,356 acres of Conditionally Approved waters (shore to 1.5 miles from shore), 26,617 acres of Approved waters (1.5 miles to 3.0 miles), 128 acres or Prohibited waters, and 3001 acres classified as Prohibited/Safety Zone.

NSSP statistics for Atlantic Coast shore sites are presented in Table 7. Per the recommendations of the 2001 sanitary survey, sampling at ambient sites AC4, AC5, AC6, and AC7 was discontinued, and new sites were established at the open/closed boundaries around each pollution source associated with these sites. Because these new sites (AC4B, AC5A, AC6G, and AC7B) were begun in 2001, Table 7 shows only 20-25 samples for these sites. Fecal coliform data meet Conditionally Approved criteria at all ocean sites except that of AC4B. This is likely due to higher fecal coliform loading from the Little River salt marsh, which underwent a marsh restoration project to increase tidal flooding just after the sanitary survey was completed. The dramatic change in flow from this pollution source, which continues to show high fecal coliform concentrations, will warrant a 2003 re-evaluation of the closure area established around the river mouth. Another change to the Atlantic Coastal Waters will involve the reclassification of all Conditionally Approved waters to Approved, along with a revised emergency closure rainfall threshold of 2.5 inches.

Table 7: NSSP Statistics for Stations on the Atlantic Coast/Shore Sites
(Refer to Figure 4 for sampling site locations)

	AC1	AC2	AC3	AC4B	AC10	AC5A	AC6G	AC7B	AC8
Count	30	30	30	21	24	24	21	21	30
Geomean	8.3	6.6	4.9	9.5	4.7	4.8	6.2	3.8	4.1
Est. 90th	40.3	32.5	19.3	65.9	16.8	25.2	30.3	17.2	15.3

While the classification of Atlantic waters largely relies on the water sampling conducted at the shoreline sites (due to their proximity to potential/actual pollution sources), the NHDES continues to conduct sampling at boat sites as well. With the exception of ACB20, each of these sites is paired with a corresponding shore site and is located approximately 500 feet from shore. Site ACB20 is located well offshore, approximately one nautical mile south of White Island

Rye Harbor

The Rye Harbor Growing area includes 47 acres of water, all of which are classified as Prohibited/Unclassified (Figure 10). NSSP statistics for Rye Harbor sites are presented in Table 9. Site RH1, located in a tributary on the south side of the harbor, continues to show high and quite variable fecal coliform levels. Pollution source investigations by the NHDES Watershed Assistance Section are still ongoing in this area.

Table 9: NSSP Statistics for Stations in Rye Harbor
(Refer to Figure 4 for sampling site locations)

	RH1	RH2	RH3	RH4
Count	30	30	30	30
Geomean	18.9	6.3	3.8	9.1
Est. 90th	145.9	35.2	15.5	48.1

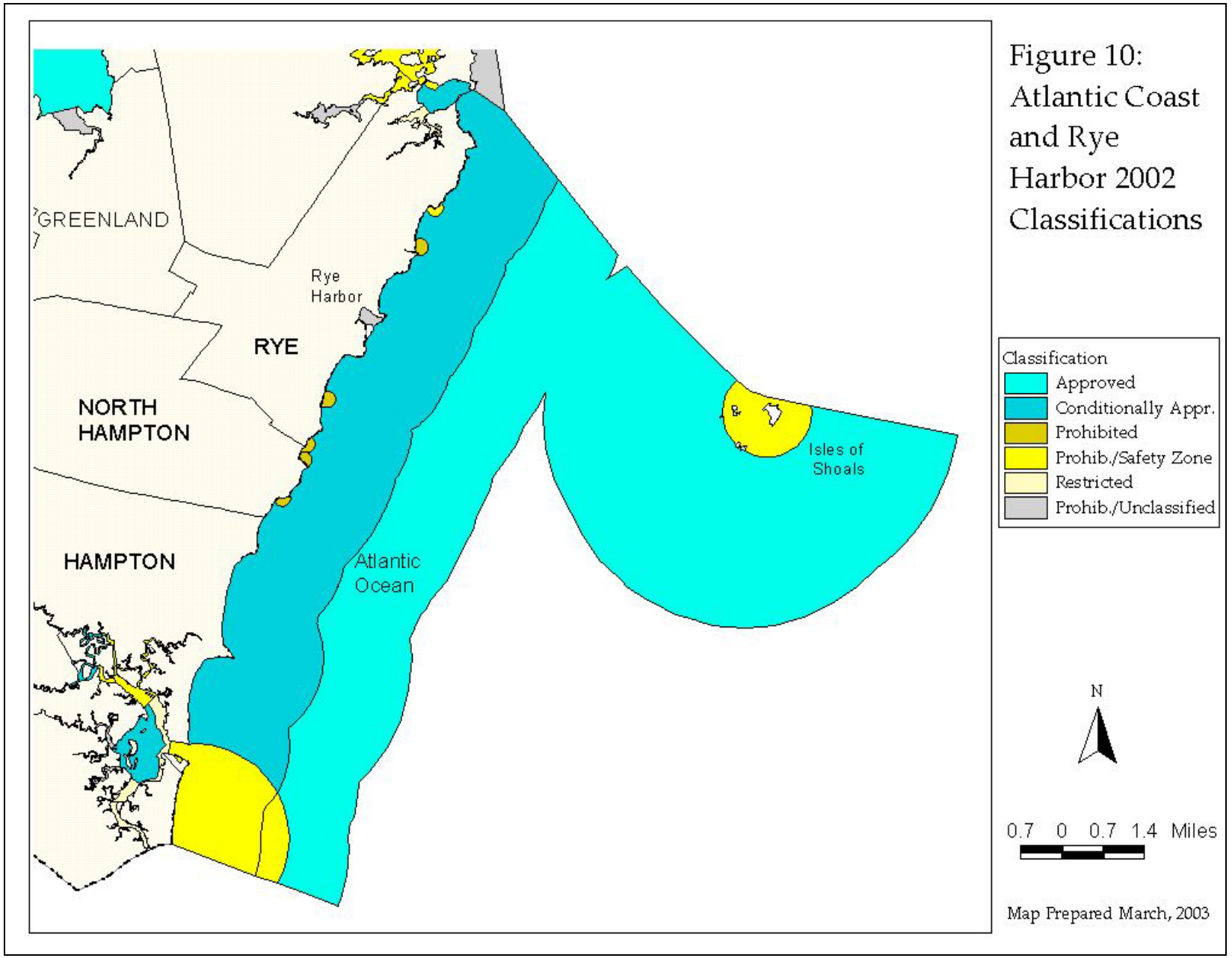


Figure 10: Atlantic Coast and Rye Harbor 2002 Classifications

Hampton/Seabrook Harbor

The Hampton/Seabrook Harbor and Tributaries growing area include 1068 acres of waters. With the completion of a sanitary survey for the Hampton Falls River and Taylor River in spring 2002, the acreage of Conditionally Approved waters increased from 387 acres to 474 acres. Classification of other sections of the growing area include, 264 acres classified as Restricted, 208 acres classified as Prohibited/Safety Zone, and 121 acres classified as Prohibited/Unclassified (Figure 11).

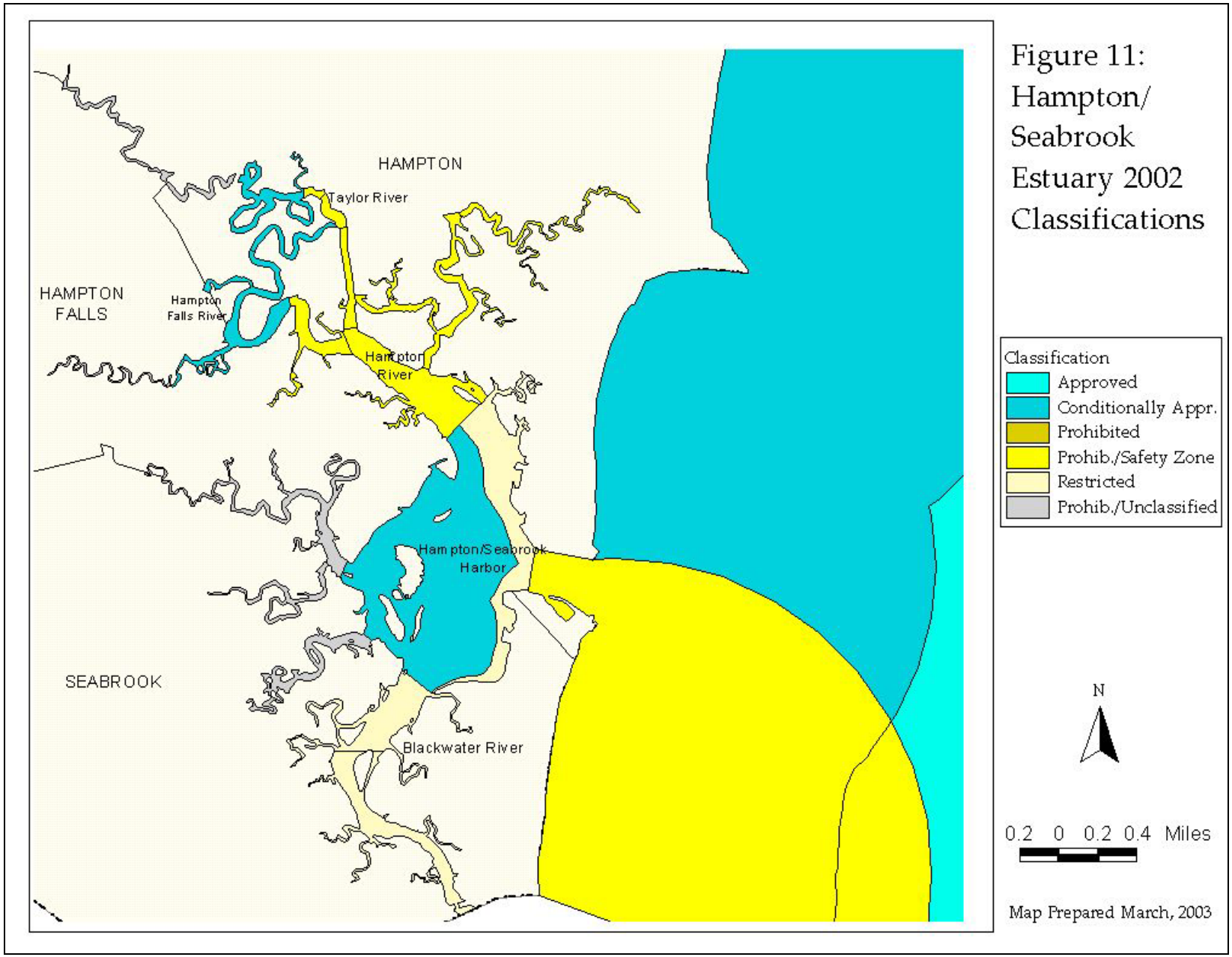
NSSP statistics for Hampton/Seabrook Harbor sites and for the Hampton Falls/Taylor River sites are presented in Table 10 and 11, respectively. The conditions under which harvesting is allowed in this area are quite restrictive, including a shortened season of November-May, and very low rainfall closure thresholds of 0.10 inches in November, April and May, and 0.25 inches in December, January, February, and March. Under these conditions, all sites meet Conditionally Approved criteria. Work to re-evaluate the current classification of all areas of the harbor itself is ongoing; however, a change to the rainfall closure threshold to 0.25 inches for all months the harbor is open, was implemented on 1/1/03.

Table 10: NSSP Statistics for Stations in Hampton/Seabrook Harbor
(Refer to Figure 5 for sampling site locations)

	HH5B	HH5C	HH10	HH11	HH12	HH17	HH18	HH19	HH2B	HH1A
Count	30	30	30	30	30	30	30	30	30	30
Geomean	4.6	4.1	3.2	4.2	4.0	3.3	3.4	4.2	3.7	4.7
Est. 90th	14.3	13.3	9.2	12.1	14.9	8.9	9.4	16.6	11.8	20.1

Table 11: NSSP Statistics for Stations in Hampton Falls and Taylor Rivers
(Refer to Figure 5 for sampling site locations)

	HH30	HH31	HH32	HH33	HH34
Count	30	30	30	30	30
Geomean	3.6	5.1	4.2	5.1	3.8
Est. 90th	10.9	18.5	15.2	20.4	10.4

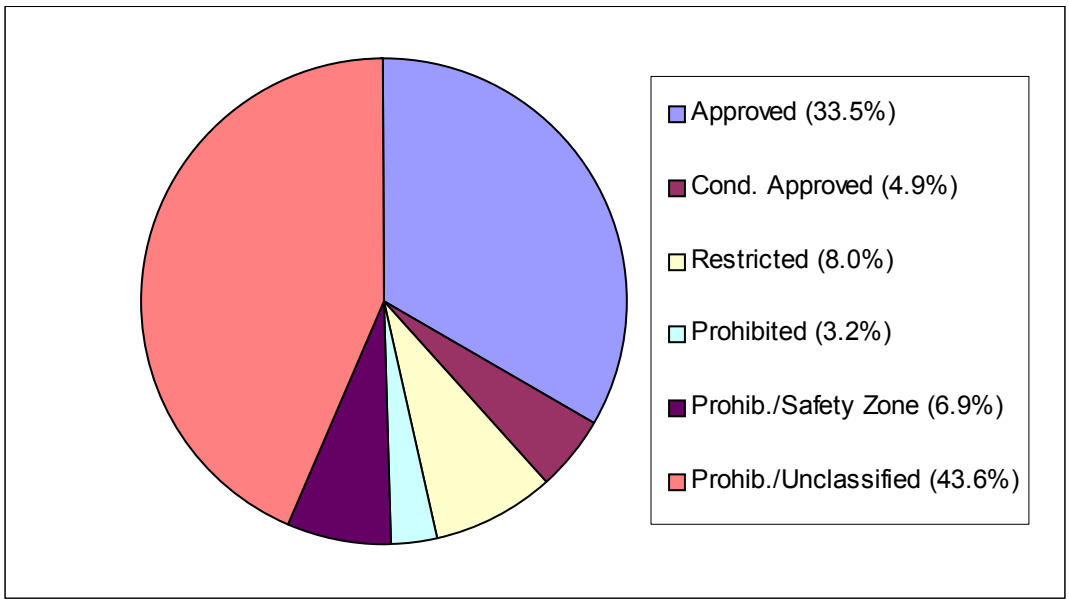

HAMPTON
Taylor River
HAMPTON FALLS
Hampton Falls River
Hampton River
Hampton/Seabrook Harbor
SEABROOK
Blackwater River
Figure 11: Hampton/ Seabrook Estuary 2002 Classifications
Classification
Approved
Conditionally Appr.
Prohibited
Prohib./Safety Zone
Restricted
Prohib./Unclassified
N
0.2 0 0.2 0.4 Miles
Map Prepared March, 2003

CLASSIFICATION SUMMARY

Summary of 2002 Classifications

A summary of estuarine acreage, grouped by classification in 2002, is given in Figure 12. Of the 13,739 acres of estuarine waters, 38.4 percent are open for harvesting (37.8 percent in 2001), while 18 percent are closed because of identified water quality problems or proximity to wastewater treatment plant outfalls and marinas. The remaining 43.6 percent is currently unclassified. NHDES intends to survey and classify all of these areas by 2005.

Figure 12: 2002 Estuarine Shellfish Water Classifications

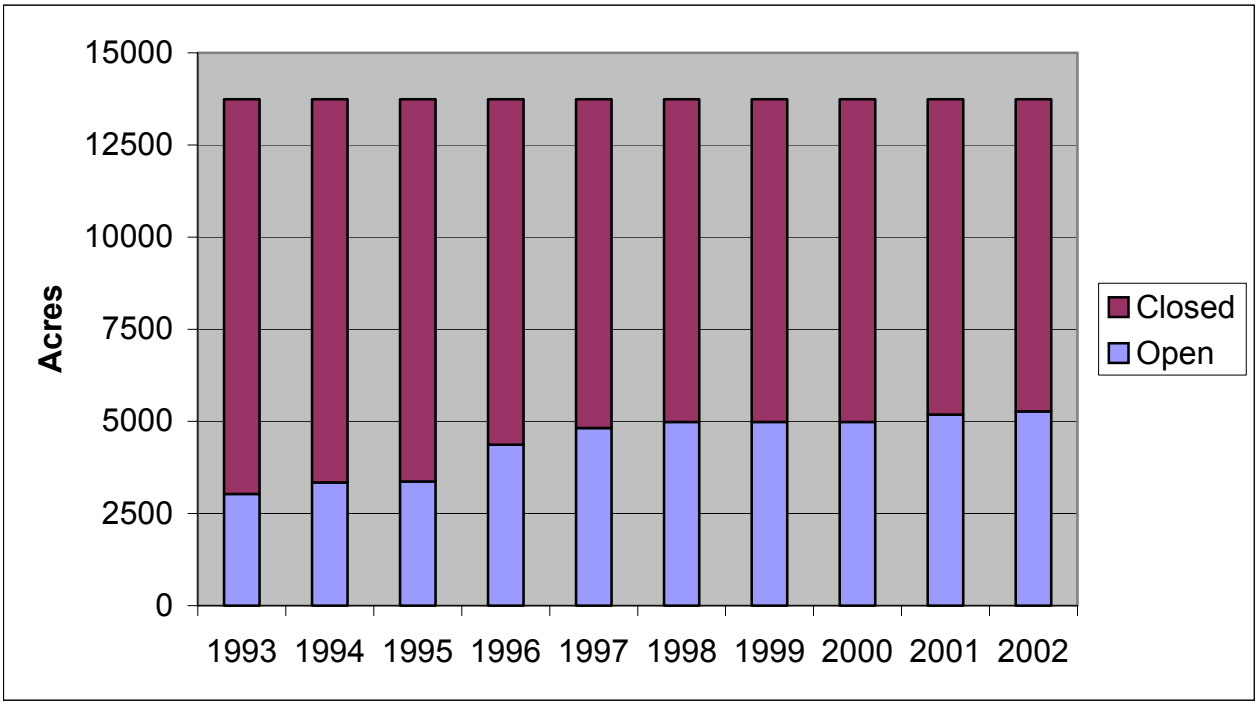


Status and Trends of Acres Open for Harvest

Since 1993, a great deal of effort has been focused on opening shellfish beds for harvesting. The increase in acreage open has included 387 acres in Hampton/Seabrook Harbor, 1002 acres in Upper Little Bay, and 564 acres in Lower Little Bay. An additional 197 acres of estuarine waters were reclassified as Conditionally Approved in portions of Little Harbor in late 2001, while approximately 86 additional acres were opened in 2002 in the Hampton Falls and Taylor rivers (Figure 13).

Figure 13 shows no increase in acreage for the period of 1998-2000. This is in part due to the fact that responsibilities for shellfish water classification shifted from the NH Department of Health and Human Services to the Department of Environmental Services in 1999, and completion of sanitary surveys begun in that year were delayed because of the transition. Furthermore, a major effort in 2000 involved classifying the 42,149 acres of Atlantic Coastal Waters. These are coastal, not estuarine, waters and therefore do not appear in Figure 13. The sanitary survey for these waters resulted in the reopening of 38,973 acres, or 92.5% of total coastal waters.

Figure 13: Trends in Estuarine Shellfish Water Openings, 1993-2002



Open/Closed Acre-Days (by Area)

While tracking the number of acres of shellfish waters is useful in measuring progress to open shellfish waters, it does not give a completely accurate picture of how often shellfish waters are actually open for harvesting. Nearly all shellfish waters are subject to temporary closures due to rainfall conditions, wastewater treatment plant upsets, and other factors. A more accurate measure of how frequently the shellfish areas are open for harvesting is to compare the number of days the flats *were* open to the number of days the flats *could be* open.

For this analysis, all growing waters listed in Appendix 1 were categorized as a softshell clam area or an oyster area. Clam areas in 2002 could be open for a total of 77 days (Friday and Saturdays for the clamming season, defined by NH Fish and Game as the day after Labor Day to end of May), while oyster areas in 2002 could be open for a total of 303 days (all days of the week for the oystering season, defined by NH Fish and Game as all months except July and August. Note that the F&G ban on oyster harvesting through winter ice is not considered in the 303 day figure due to year-to-year variations in the spatial and temporal extent of ice cover). By multiplying these numbers by the acreage values for each growing area and summing the total, a total possible acre-day value is derived. NHDES Shellfish Program records for the harvesting season were then used to determine the actual number of open days for each growing area, and similar calculations were performed to determine total actual acre-days open. For all 13,739 acres of estuarine growing waters, there were 2,177,950 possible open acre-days. The actual number of open acre-days was 1,025,397.4 or 47.1 percent of the total. This is slightly higher than the 43.6 percent figure

calculated for 2001. The increase is due in part to new acres being open for part of the year in Little Harbor, Taylor River, and Hampton Falls River. The relatively low number of weekends closed due to rain in Hampton/Seabrook, coupled with only one emergency closure for the year (compared to four in 2001), also helps explain the higher percent open value. Calculations for selected open areas (Hampton/Seabrook, Great Bay, Upper Little Bay, and Lower Little Bay) are presented in Table 12.

Table 12: Percent Open Acre-Days for Hampton/Seabrook, Great Bay, and Little Bay for Calendar Year 2002

Area	Open Water Acres	Possible # of Open Days	Actual # of Open Days	Possible Acre-Days Open	Actual Acre-Days Open	%Actual Acre-Days Open
Hampton/Seabrook (clam)	386.92	77	29	29792.8	11220.7	37.7
Great Bay (oyster)	3032.22	303	295	918762.7	894504.9	97.4
Upper Little Bay (clam)	1001.52	77	75	77117.0	75114.0	97.4
Lower Little Bay (clam)	564.10	77	75	43431.9	42303.8	97.4

CONCLUSIONS AND WORK FOR 2003

The NHDES Shellfish Program has responsibility for classifying the shellfish growing waters of the State of New Hampshire. Of the 13,739 acres of estuarine growing waters, 56.4 percent are classified, while 43.6 percent are unclassified. On an acreage-only basis, 38.4 percent are currently open for harvesting, while on an acre-day basis 47.1% were open in 2002. All of the 42,102 acres of Atlantic coastal waters are classified, with 92.5% of all acres open for harvesting. For the fourth consecutive year, no paralytic shellfish poisoning closures were instituted. One "emergency" closure due to heavy rain and a combined sewage overflow in the Town of Exeter was instituted. Routine water sampling data collected over the last several years, including the nearly 750 samples collected during the course of 56 sampling trips in 2002, support the current classifications of all waters currently open for harvesting, although some changes will be implemented in 2003. The three-inch rainfall threshold to trigger emergency closures for all areas will be lowered to 2.5 inches. The rainfall closure threshold in Hampton/Seabrook will be raised to 0.25 inches for all open months. The Conditionally Approved portion of Atlantic coastal waters will be reclassified to Approved, and the Approved waters in Little Bay will be reclassified to Conditionally Approved. Shellfish tissue sampling for bacterial concentrations will be used to supplement standard water testing, and these data will be used to drive decisions to reopen areas that are temporarily closed for rainfall, wastewater treatment facility upsets, and other pollution-generating events. Sanitary survey work in 2003 will focus on continuing survey work already in progress in Hampton/Seabrook, the Bellamy River, Great Bay, and Little Bay. A dye/dilution study on the Newmarket wastewater plant, which is needed to properly classify Great Bay, will likely be pursued in 2003. A triennial evaluation of the Atlantic Coast is scheduled for 2003, and survey work on the Cocheco, Salmon Falls, and Upper Piscataqua rivers will continue in 2003, but will not be completed until at least 2004.

APPENDIX 1
Shellfish Water Classification and Acreage

Note: Estuarine acreage values differ slightly from those published for 2001 due to the addition of a 20.9- acre stretch of the upper Taylor River, which had been excluded from previous lists of estuarine waters.

AREA	WATERBODY UNIT	CLASSIFICATION	OPEN/ CLOSED	WATER TYPE	WATER ACRES
ATLANTIC COAST	Atlantic Ocean (3 mi)	Approved	OPEN	Ocean	26616.53
	Atlantic Ocean (1.5 mi)	Conditionally Approved	OPEN	Ocean	12357.03
	Bass Beach	Prohibited	CLOSED	Ocean	21.98
	Chapel Brook	Prohibited	CLOSED	Ocean	21.34
	Eel Pond	Prohibited	CLOSED	Ocean	32.18
	Little River	Prohibited	CLOSED	Ocean	19.45
	Parsons Creek	Prohibited	CLOSED	Ocean	33.14
	Seabrook WWTP out.	Prohibited/Safety Zone	CLOSED	Ocean	2173.13
	Star Island WWTP out.	Prohibited/Safety Zone	CLOSED	Ocean	803.86
	Wallis Sands WWTP out.	Prohibited/Safety Zone	CLOSED	Ocean	23.71
	Rye Harbor	Prohibited/Unclassified	CLOSED	Estuary	46.97
LITTLE HARBOR AND BACK CHANNEL	Back Channel	Prohibited/Safety Zone	CLOSED	Estuary	421.64
	Upper Sagamore Creek	Prohibited/Unclassified	CLOSED	Estuary	95.86
	Lower Sagamore Creek	Prohibited/Safety Zone	CLOSED	Estuary	76.24
	Little Harbor	Conditionally Approved	OPEN	Estuary	197.98
	Wentworth Marina	Prohibited/Safety Zone	CLOSED	Estuary	14.73
	Witch Creek	Restricted	CLOSED	Estuary	93.34
GREAT BAY TRIBUTARIES	Lamprey River	Prohibited/Unclassified	CLOSED	Estuary	102.56
	Squamscott River	Prohibited/Unclassified	CLOSED	Estuary	306.51
	Winnicut River	Prohibited/Unclassified	CLOSED	Estuary	123.50
	Bellamy River	Prohibited/Unclassified	CLOSED	Estuary	432.46
	Oyster River	Prohibited/Unclassified	CLOSED	Estuary	307.48
	Cocheco River	Prohibited/Unclassified	CLOSED	Estuary	158.24
	Salmon Falls River	Prohibited/Unclassified	CLOSED	Estuary	365.32
GREAT BAY	Great Bay 1	Approved	OPEN	Estuary	3032.22
	Great Bay 2	Restricted	CLOSED	Estuary	741.66
	Great Bay 3	Prohibited	CLOSED	Estuary	442.19
LITTLE BAY	Upper Little Bay	Approved	OPEN	Estuary	1001.52
	Lower Little Bay	Prohibited/Unclassified	CLOSED	Estuary	52.24
	Lower Little Bay	Prohibited/Safety Zone	CLOSED	Estuary	177.74
	Lower Little Bay	Approved	OPEN	Estuary	457.07
	Lower Little Bay	Prohibited/Safety Zone	CLOSED	Estuary	16.09
	Lower Little Bay	Approved	OPEN	Estuary	106.98
	Lower Little Bay	Prohibited/Safety Zone	CLOSED	Estuary	28.01

AREA	WATERBODY UNIT	CLASSIFICATION	OPEN/ CLOSED	WATER TYPE	WATER ACRES
HAMPTON HARBOR AND TRIBUTARIES	Hampton River 1	Prohibited/Safety Zone	CLOSED	Estuary	89.06
	Hampton Falls River	Prohibited/Unclassified	CLOSED	Estuary	7.09
	Browns River	Prohibited/Unclassified	CLOSED	Estuary	46.15
	Hunts Island Creek	Prohibited/Unclassified	CLOSED	Estuary	15.99
	Mill Creek	Prohibited/Unclassified	CLOSED	Estuary	31.35
	Blackwater River 2	Restricted	CLOSED	Estuary	71.07
	Blackwater River 1	Restricted	CLOSED	Estuary	69.47
	Taylor River	Prohibited/Unclassified	CLOSED	Estuary	20.94
	Hampton River 3	Conditionally Approved	OPEN	Estuary	386.92
	Hampton River 2	Restricted	CLOSED	Estuary	123.83
	Blind Creek	Prohibited/Safety Zone	CLOSED	Estuary	12.43
	Nudds Canal	Prohibited/Safety Zone	CLOSED	Estuary	13.50
	Tide Mill Creek 2	Prohibited/Safety Zone	CLOSED	Estuary	34.31
	Tide Mill Creek 1	Prohibited/Safety Zone	CLOSED	Estuary	21.66
	Taylor River	Conditionally Approved	OPEN	Estuary	29.66
	Taylor River-Marina	Prohibited/Safety Zone	CLOSED	Estuary	2.52
	Taylor River	Conditionally Approved	OPEN	Estuary	11.79
	Taylor River	Prohibited/Safety Zone	CLOSED	Estuary	6.91
	Upp. Hmp. Falls River	Conditionally Approved	OPEN	Estuary	45.37
	Low. Hmp. Falls River	Prohibited/Safety Zone	CLOSED	Estuary	28.03
PISCATAQUA RIVER	Upper Piscataqua River	Prohibited/Unclassified	CLOSED	Estuary	812.71
	Lower Piscataqua River	Prohibited/Unclassified	CLOSED	Estuary	1638.76
PORTSMOUTH HARBOR	Lower Ports. Harbor	Prohibited/Unclassified	CLOSED	Estuary	908.50
	Upper Ports. Harbor	Prohibited/Unclassified	CLOSED	Estuary	512.29

APPENDIX 2
Fecal Coliform Data Used for Calculation of NSSP Statistics

GREAT BAY DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program, excluding the following data: July and August; data with antecedent (four-day) rainfall greater than 2.5 inches; data that failed standard Quality Assurance checks.

RAIN	DATE	GB16	GB4A	GB5
1.27	03/23/1998	4.5	11	13
0.00	04/13/1998	1.8	4.5	1.8
0.81	05/04/1998	13	17	4.5
1.43	06/01/1998	22	49	13
0.02	09/01/1998	1.8	4	1.8
0.00	09/22/1998		1.8	
0.00	11/09/1998	4.5	49	13
0.00	12/07/1998	4.5	4.5	2
1.21	03/29/1999	1.8	7.8	4.5
0.00	04/05/1999	2	13	2
0.00	05/03/1999	1.8	4.5	
0.04	06/07/1999	1.8	1.8	1.8
0.92	10/18/1999	4.5	49	1.8
0.54	11/29/1999	26	29	49
0.17	12/14/1999		33	
0.00	03/24/2000	2	6.8	2
0.9	04/12/2000	2	4.5	2
0.00	05/10/2000	4.5	13	2
0.08	06/06/2000	2	23	2
0.12	09/25/2000	2	2	2
1.12	10/10/2000	2	2	2
0.81	11/07/2000	33	6.8	11
0.26	04/12/2001	7.8	7.8	4.5
0.11	05/17/2001	2	2	2
0.53	06/28/2001	11	4.5	2
0.02	09/06/2001	2	2	2
0.09	10/10/2001	2	2	2
0.34	11/05/2001	4.5	23	4.5
0.00	12/10/2001	2	2	1.8
0.32	02/25/2002	4.5	4	14
0.54	03/20/2002	4.5	49	4
0.88	04/02/2002	2	2	2
0.53	05/06/2002	2	2	2
1.07	06/19/2002	4	2	4.5
0.79	09/18/2002	2	2	2
0.94	10/14/2002	2	2	6.8
1.19	11/14/2002		13	23
0.00	12/02/2002	33	46	33

LITTLE BAY DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program, excluding the following data: July and August; data with antecedent (four-day) rainfall greater than 2.5 inches; data that failed standard Quality Assurance checks.

RAIN	DATE	GB17	GB19	GB25	GB27	GB28	GB50	GB6	GB7A
0.39	04/06/98			2	4.5	2			
0.00	04/13/98	1.8	1.8	1.8	1.8	1.8	1.8	2	4.5
1.52	04/27/98			2	4.5	4			
0.81	05/04/98	4.5	2	4	4.5	2		4.5	1.8
0.00	05/26/98			2	4.5	1.8			
1.43	06/01/98	6.8	7.8	33	33	14	490	7.8	33
0.00	06/22/98			23	13	22			
0.02	09/01/98	1.8	2	1.8	2	2	1.8	1.8	1.8
0.00	11/09/98	4.5	2	23	6.8	7.8	2	13	49
0.00	12/07/98	7.8	23	1.8	7.8	4	4.5	4.5	23
1.21	03/29/99	4.5	1.8	13	17	6.8	4	4.5	7.8
0.00	04/05/99	11	2	4.5	1.8	7.8	4.5	13	7.8
0.00	05/03/99	1.8	4.5	1.8	1.8	1.8	6.1	1.8	1.8
0.04	06/07/99	1.8	1.8	1.8	1.8	17	2	1.8	1.8
0.92	10/18/99	33	1.8	26		17	33	1.8	6.8
0.54	11/29/99	33	46	23		33	23	23	130
0.17	12/14/99	23	33	79	13	49	23	23	33
0.00	03/24/00	7.8	2	4.5	4.5	2	2	2	2
0.90	04/12/00	2	4.5	2	2	2	2	4.5	4.5
0.00	05/10/00	2	2	4.5	7.8	9.3	79	2	4.5
0.08	06/06/00	2	2	2	2	4.5	49	2	6.8
0.12	09/25/00	2	2	2	2	2	2	2	2
1.12	10/10/00	2	2	6.8	1.8	2	2	4	2
0.81	11/07/00	6.8	4.5	46	6.8	4.5	2	2	4.5
0.11	05/17/01	2	2	2	2	2	2	2	2
0.53	06/28/01	4.5	2	4	2	2	7.8	4.5	2
0.02	09/06/01	2	2	2	4.5	2	4.5	2	4.5
0.09	10/10/01	2	2	2	2	1.8	2	2	17
0.34	11/05/01	2	2	4.5	2	4	2	4.5	13
0.00	12/10/01	2	2	4.5	2	2	2	4.5	4.5
0.32	02/25/02	23	22	33	22	17	14	31	7.8
0.91	03/05/02						6.8		
0.54	03/20/02	13	7.8	13	27	4.5	17	17	79
0.88	04/02/02	2	2	6.8	2	2	2	2	2
0.04	04/11/02						2		
0.56	04/17/02						4.5		
0.53	05/06/02	2	2	4.5	2	2	2	4.5	2
1.07	06/19/02	4.5	2	4.5	2	4	2	4.5	7.8
0.79	09/18/02	2	2	4.5	2	2	2	4.5	2
0.94	10/14/02	23	6.8	17	79	7.8	4.5	7.8	2
0.26	10/23/02						7.8		
1.19	11/14/02	33	130	33	79	17	23	17	23
0.00	12/02/02	13	33	33	49	33	33	26	33

PISCATAQUA RIVER DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program, excluding the following data: July and August; data with antecedent (four-day) rainfall greater than 2.5 inches; data that failed standard Quality Assurance checks.

RAIN	DATE	GB21	GB22	GBA7	GB20	GB18	GBA10	GBA11.5	GB24
1.21	03/29/99	11	23	33	33	13	33	6.8	49
0.00	04/05/99	49	13	23	4.5	6.8	6.8	7.8	17
0.50	04/20/99	46	17	2	11		7.8	6.8	
0.00	05/03/99	49	7.8	23	4.5	1.8	4.5	4.5	4.5
0.00	05/18/99	79	17	79	11		2	4.5	
0.04	06/07/99	33	7.8	49	6.8	1.8	2	2	2
0.00	06/22/99	11	6.8	13	2		1.8	1.8	
0.35	10/12/99	95	33	70	49		13	13	
0.92	10/18/99	240	79	920	49	6.8	33	14	3.6
0.00	11/01/99					11			7.8
0.54	11/29/99	130	240	130	130		49	33	
0.17	12/14/99	33	170	46	130	79	79	13	33
0.00	12/27/99	49	240	64	130		95	23	
0.00	03/24/00	17	40	1600	49	6.1	14	11	2
0.90	04/12/00	49	14	17	13	2	33	13	1.8
0.00	05/10/00	240	220	79	130	6.1	46	70	2
0.08	06/06/00	33	33	33	64	2	33	4.5	6.8
0.12	09/25/00	170	23	79	17	2	6.8	2	2
1.12	10/10/00	46	49	46	49	4.5	79	4.5	4.5
0.81	11/07/00	13	23	13	7.8	33	13	13	17
0.26	04/12/01	7.8	2	7.8	2	2	23	4	2
0.11	05/17/01	130	33	22	7.8	2	13	2	7.8
0.53	06/28/01	170	58	240	49	2	13	6.8	49
0.02	09/06/01	240	17	79	33	4.5	13	2	33
0.09	10/10/01	49	2	2	4.5	2	4.5	2	4.5
0.34	11/05/01	130	31	23	13.0	2	11	4	13
0.00	12/10/01	6.8	2	4.5	2	4.5	2	2	2
0.32	02/25/02	23	7.8	4.5	9.3	23	6.8	33	9.3
0.54	03/20/02	33	7.8	13	7.8	13	4	2	7.8
0.88	04/02/02	33	13	13	17	2	2	13	17
0.04	04/11/02				22		2	2	22
0.53	05/06/02	33	23	23	13	2	23	2	13
1.07	06/19/02	130	49	70	33	4.5	33	33	33
0.79	09/18/02	26	4.5	7.8	4.5	1.8	2	2	4.5
0.94	10/14/02	23	7.8	14	6.8	23	11	23	6.8
1.19	11/14/02	49	79	110	240	49	49	23	240
0.00	12/02/02	23	13	79	70	2	23	13	70

BELLAMY RIVER DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program, excluding the following data: July and August; data with antecedent (two-day) rainfall greater than 2.5 inches; data that failed standard Quality Assurance checks.

RAIN	DATE	GB2	GB33	GB34
1.31	06/01/98	330	790	
0.00	06/22/98		350	
0.02	09/01/98	1.8	7.8	
0.00	11/09/98	7.8	7.8	
0.00	12/07/98	1.8	2	
1.21	03/29/99	14	23	
0.00	04/05/99	6.1		
0.00	05/03/99	1.8		
0.04	06/07/99	1.8		
0.00	11/01/99	7.8		
0.04	12/14/99	7.8		
0.00	03/24/00	2	17	
0.12	04/12/00	2	2	
0.00	05/10/00	13	33	
0.02	06/06/00	11	17	
0.12	09/25/00	2	4	
0.00	10/10/00	2	11	7.8
1.18	10/19/00			540
0.81	11/07/00	2	2	2
0.11	05/17/01	2	2	2
0.00	06/28/01	13	17	2
0.02	09/06/01	2	49	2
0.09	10/08/01			13
0.00	10/10/01	2	2	2
0.10	11/05/01	2	13	4.5
0.00	12/10/01	2	2	2
0.00	02/25/02	79	6.8	11
0.54	03/20/02	49	79	49
0.77	04/02/02	2	2	4
0.03	04/11/02	2	2	2
0.00	05/06/02	2	2	2
1.07	06/19/02	4	33	6.8
0.79	09/18/02	4	7.8	4
0.94	10/14/02	4.5	4.5	17
0.26	10/23/02	4	2	4
1.19	11/14/02	49	130	110
0.00	12/02/02	31	49	22

LITTLE HARBOR/BACK CHANNEL DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program, excluding the following data: June, July and August; data with antecedent (two-day) rainfall greater than 0.5 inches; data that failed standard Quality Assurance checks. Note that sample collection at all boat ("LHB") sites began in May 2001. Samples prior to that date were collected from adjacent shore sites.

RAIN	DATE	LHB2	LHB9	LHB8	T7	LHB6	LHB5	LHB16	T14	LHB13	LHB1
0.19	05/10/99	11	1.8	2	79	1.8	1.8	4.5	13	6.8	1.8
0.00	05/18/99	2	2	4.5	17	1.8	1.8	7.8	6.8	6.8	2
0.45	10/04/99	1.8			34	14			11	1.8	2
0.05	10/13/99	4.5	7.8	7.8	17	64	1.8	7.8	7.8	4.5	1.8
0.00	11/01/99	4.5	79	1.8	22	2	6.1	4.5	7.8	4	1.8
0.06	11/02/99	70				4.5		2			
0.19	11/15/99	4.5	350	4	49	4	4.5	13	49	4	2
0.02	12/13/99	2	14	7.8	23	11	49	17	33	4.5	17
0.00	12/20/99	1.8	4	1.8	23	13	2	1.8	4	2	1.8
0.00	12/28/99	2	23	2	13	2	7.8	33	4.5	6.8	6.8
0.00	01/30/00	1.8	4.5	79	1.8	1.8	1.8	1.8	1.8	1.8	1.8
0.00	02/24/00	2	3.7	17	4.5	7.8	2	130	33	2	1.8
0.13	03/10/00	7.8	14	4	1.8	13	7.8	4	4	4.5	4.5
0.00	05/17/00	2	2	2	17	2	2	1.8	2	2	2
0.32	10/17/00	2	110	22	95	4	2	23	33	4.5	2
0.00	12/07/00	7.8	11	2	2	6.8	11	17	4.5	6.8	2
0.00	12/10/00					2			2		
0.18	12/12/00	49		2		4.5		13	79	17	
0.00	01/19/01	2	6.8	11	2	2	33	17	4.5	14	
0.00	02/05/01		79	4	1.8	13	2	6.1	31	2	2
0.00	04/16/01	2	6.8	4.5	2	9.3	2	2	13	2	2
0.00	05/03/01	2	4	2	49	7.8	4	2	79	7.8	2
0.00	10/29/01	2	33	4.5	49	1.8	7.8	17	2	7.8	2
0.30	11/06/01	7.8	7.8	23	49	23	14	79	170	17	13
0.04	12/06/01	2	17	4.5	240	4.5	2	13	23	2	2
0.00	01/22/02	9.2	2	2	46	4.5	4	2	33	2	2
0.00	02/06/02	2	7.8	2	17	1.8	1.8	2	4.5	4	7.8
0.44	03/11/02	4	6.8	2	33	2	4	2	11	2	2
0.01	04/08/02	4.5	2	7.8	94	2	2	4.5	7.8	2	4.5
0.39	05/13/02	7.8	21	6.8	79	17	7.8	6.1	130	4.5	4.5
0.00	10/09/02	4.5	49	13	130	33	11	22	17	23	7.8
0.00	12/11/02	4.5	17	13	33	2		7.8	49	11	

ATLANTIC COAST (SHORE) DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program, excluding the following data: data with antecedent (three-day) rainfall greater than 2.5 inches; data that failed standard Quality Assurance checks.

RAIN	DATE	AC1	AC10	AC2	AC3	AC4B	AC5A	AC6G	AC7B	AC8
1.01	01/11/00	7.8		11	22					4.5
0.14	05/23/00	2		2	2					2
0.00	05/31/00	2		2	2					2
0.56	06/19/00	2		33	6.8					17
0.56	07/10/00	2		6.8	2					2
0.11	07/24/00	4.5		2	2					79
0.67	08/09/00	2		2	6.8					2
0.05	08/21/00	2		2	2					2
0.12	09/06/00	4.5		2	2					7.8
0.00	10/25/00	2		2	2					2
0.72	11/01/00	70		14	13					11
2.20	11/13/00									2
0.00	12/07/00	79	2	49	2					2
0.00	12/10/00	33	33				2			
0.18	12/12/00	2	2				2			
0.18	12/12/00						2			
0.00	02/14/01	7.8	2	2	2	2	2	2	2	4
0.00	03/07/01	14	2	1.8	4.5	2	2	2	2	2
0.00	04/26/01		13	4.5	2	2	2	7.8	2	2
0.00	05/01/01	2	4.5	2	2	4	2	17	2	2
0.00	06/07/01	33	2	31	2	2	2	4.5	2	4.5
0.73	07/10/01	7.8	7.8	4	4.5	7.8	4	2	2	2
0.00	08/08/01	13	4	22	79	33	33	17	4.5	2
0.08	09/20/01	17	17	7.8	7.8	33	49	46	4.5	2
0.35	10/15/01	6.8	11	49	6.8	7.8	4.5	49	7.8	2
0.29	11/26/01	2	2	2	4.5	4	2	2	2	2
0.92	12/20/01	26	2	1.8	7.8	4.5	2	7.8	2	4.5
0.00	01/28/02	17	7.8	7.8	2	350	13	2	2	2
0.61	02/11/02	26	6.8	11	22	79	2	2	2	4.5
0.00	03/25/02	2	2	33	7.8	31	1.8	2	2	1.8
0.02	04/22/02	2	2	4.5	2	4	4.5	17	350	13
0.90	05/21/02	63	2	2	4.5	2	1.8	2	2	2
0.03	07/09/02	49	14	4.5	13	6.8	7.8	79	6.8	11
0.00	08/12/02	11	2	2	2	79	130	17	7.8	23
0.24	09/03/02	11	27	49	70	27	46	4.5	4.5	17
0.00	10/21/02	14	2	49	2	2	2	2	4.5	4.5
1.53	11/19/02	11	17	13	22	22	17	4.5	7.8	33

ATLANTIC COAST (BOAT) DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program, excluding the following data: data with antecedent (three-day) rainfall greater than 2.5 inches; data that failed standard Quality Assurance checks.

RAIN	DATE	ACB1	ACB2	ACB20	ACB3	ACB4	ACB5	ACB6	ACB7	ACB8
0.00	01/19/00			1.8						
0.00	01/30/00			1.8						
0.00	02/22/00			1.8						
0.07	03/06/00			1.8						
0.12	03/09/00			1.8						
0.00	03/23/00			2						
0.90	04/13/00			2						
1.21	05/15/00			2						
0.14	05/23/00	2	2	2	2	2	2	2	2	2
0.00	05/31/00	2	2		2	2	2	2	2	2
0.00	06/08/00			2						
0.56	06/19/00	2	2	2	2	2	2	2	2	7.8
0.56	07/10/00	2	2	2	2	2	2	2	2	2
0.11	07/24/00	4.5	2	2	2	2	2	2	2	2
0.67	08/09/00	2	2	2	2	2	2	2	2	2
0.05	08/21/00	2	2	2	2	2	4.5	7.8	2	2
0.05	08/22/00			2						
0.12	09/06/00	7.8	2	2	2	2	2	2	2	2
1.29	09/19/00			2						
0.00	10/25/00	2	2	2	2	2	2	2	2	4.5
0.25	04/09/01			2						
0.26	05/14/01	130	2	2	2	2	2	2	2	2
1.55	06/04/01	2	2	2	2	2	2	2	4	2
0.00	07/25/01			2						
0.03	08/30/01	4.5	2	2	2	2	2	2	2	2
0.08	09/20/01	7.8	4.5	2	2	11	13	4.5	7.8	2
0.00	10/03/01	2	2	2	2	2	2	2	2	4.5
0.00	10/12/01	23	4.5		2	1.8	2	2	2	2
0.00	05/08/02			2						
0.90	05/20/02	2	2	2	2	2	4	7.8	2	2
1.27	06/25/02	33	2	2	2	1.8	2	2	2	4.5
0.00	08/05/02	2	2		2	2	2	2	7.8	2
0.00	09/09/02	2	2	2	2	17	2	4.5	4.5	4.5
0.26	10/25/02	2	2	2	2	2	2	2	2	2
1.18	11/15/02			2						
0.00	12/18/02	4.5	4.5		17	2	2	2	2	4

RYE HARBOR DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program, excluding the following data: June, July and August; data with antecedent (three-day) rainfall greater than 2.5 inches; data that failed standard Quality Assurance checks.

RAIN	DATE	RH1	RH2	RH3	RH4
0.00	01/30/96	7.8	4.5	1.8	1.8
0.00	02/27/96	2	4.5	1.8	2
0.02	03/26/96	7.8	7.8	2	7.8
0.50	04/29/96	11	1.8	1.8	4
0.00	05/28/96	2	1.8	1.8	1.8
0.00	11/19/96	17	27	1.8	2
2.49	12/09/96	110	23		49
0.00	01/14/97	4.5	1.8	4	1.8
0.00	02/18/97	1.8	1.8	1.8	4.5
0.00	03/11/97	2	2	7.8	2
1.15	04/28/97	330	2		1.8
0.00	10/21/97	14	79	9.3	46
1.95	03/09/98	79	33	1.8	13
0.12	04/27/98	6.8	2	2	4.5
0.00	05/19/98	13	1.8	17	4.5
0.15	11/16/98	13	1.8		7.8
0.14	05/23/00	33	2	4.5	11
0.00	05/31/00	4.5	33	2	7.8
0.12	09/06/00	17	4.5	2	11
0.00	10/25/00	34	1.8	2	4.5
0.72	11/01/00	49	4.5	9.3	33
0.00	12/07/00	40	2		2
0.00	01/08/01	2	2	2	31
0.00	04/26/01	31	2	4.5	13
0.00	05/01/01	9.3	2	2	2
0.08	09/20/01	140	49	23	79
0.35	10/15/01	280	49	7.8	79
0.29	11/26/01	6.8	4.5	2	13
0.00	01/28/02	4.5	49	2	130
0.00	03/25/02	3.6	2	2	4.5
0.02	04/22/02	4	13	2	4
0.90	05/21/02	7.8	4	1.8	2
0.24	09/03/02	540	22	40	13
0.00	10/21/02	13	6.8	2	3.7
1.53	11/19/02	170	23	130	49

HAMPTON/SEABROOK HARBOR DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program, excluding the following data: June, July, August, September, and October; data with antecedent (three-day) rainfall greater than 0.10 inches (Nov, April, May), 0.25 inches (Dec-March); data that failed standard Quality Assurance checks.

RAIN	DATE	HH10	HH11	HH12	HH17	HH18	HH19	HH1A	HH2B	HH5B	HH5C
0.00	02/11/97	4.5	4.5	23	6.8	4	4.5	4.5	2	7.8	13
0.17	05/13/97		2	13	11		7.8		49		
0.00	12/09/97	1.8	2	1.8	1.8	1.8	1.8	1.8	1.8	1.8	1.8
0.00	01/05/98	13	13	22	14	7.8	7.8	11	7.8	6.8	
0.00	02/02/98	2	2	2	2	1.8	7.8	14	11	4.5	2
0.08	03/02/98	7.8	2	4.5	2	7.8	4	9.3	2	4.5	2
0.00	11/02/98	1.8	4.5	14	4	13	7.8	110	11	17	4
0.00	11/30/98	4	13	7.8	13	4.5	9.3	13	7.8	13	4.5
0.00	02/02/99	2	13	33	7.8	4	6.8	9.3	4.5	2	13
0.00	04/12/99	1.8	2	1.8	1.8	1.8	1.8	1.8	2	1.8	1.8
0.11	05/10/99	2	4.5	1.8	4.5	11	4.5	7.8	7.8	2	1.8
0.00	12/28/99	49	46	4.5	4.5	2	2	4.5	6.8	24	49
0.00	01/19/00	1.8	4.5	2	2	4.5	130	1.8	1.8	7.8	2
0.00	04/02/00	2	2	2	2	2	2	2	2	2	2
0.01	05/07/00	2	7.8	7.8	2	4.5	4.5	2	2	2	7.8
0.00	12/04/00	6.1	4	2	4.5	6.8	2	2	4	4.5	4.5
0.00	12/05/00	6.8	9.2	4.5	2	4.5	7.8	6.8	4.5	2	2
0.00	12/10/00	2	2	1.8	2	2	1.8	2	2	14	2
0.00	01/22/01	2	2	4.5	2	2	2	2	2	2	2
0.00	02/20/01	1.8	2	4.5	2	2	2	2	4	2	4
0.06	04/23/01	2	2	2	2	1.8	2	2	2	2	1.8
0.00	05/21/01	2	2	2	2	2	2	1.8	2	2	4.5
0.00	11/13/01	7.8	2	13	2	4.5	6.8	13	4	4.5	2
0.00	12/05/01	2	4.5	4.5	6.8	2	17	4	4.5	2	2
0.00	12/11/01	2	4.5	2	1.8	2	2	4.5	2	2	2
0.00	01/24/02	2	4	2	2	2	2	4.5	4.5	7.8	4.5
0.00	02/26/02	4	4.5	1.8	4	2	4.5	2	2	4.5	2
0.01	05/06/02	2	2	2	2	2	2	2	1.8	2	2
0.00	05/08/02	2	7.8	2	4.5	2	2	2	2	2	2
0.05	11/12/02	13	13	110	49	46	70	110	130	33	49
0.00	12/10/02	2	2	4	2	1.8	1.8	2	4.5	7.8	2
0.00	12/19/02	6.8	6.8	2	4	6.8	2	11	2	2	11

HAMPTON FALLS RIVER AND TAYLOR RIVER DATA

Fecal coliform (MPN/100ml) data for samples collected under Systematic Random Sampling program, excluding the following data: June, July, August, September, and October; data with antecedent (three-day) rainfall greater than 0.10 inches (Nov, April, May), 0.25 inches (Dec-March); data that failed standard Quality Assurance checks.

RAIN	DATE	HH30	HH31	HH32	HH33	HH34
0.01	03/23/00	2	11	6.1	4	2
0.00	04/02/00	2	4	2	2	2
0.00	04/16/00	4	2	2	2	2
0.12	05/02/00	2	4.5	2	2	4.5
0.01	05/07/00	17	33	13	2	7.8
0.19	05/22/00	2	2	2	7.8	4.5
0.00	05/30/00	1.8	13	1.8	14	7.8
0.00	12/04/00	4.5	2	4	13	4.5
0.00	12/05/00	1.8	22	2	6.8	4.5
0.00	12/10/00	2	4.5	3.7	2	2
0.00	01/22/01	2	2	2	2	2
0.00	02/20/01	2	7.8	7.8	4.5	2
0.06	04/23/01	2	2	2	2	2
0.00	05/21/01	2	2	2	7.8	13
0.00	11/13/01	4	7.8	4.5	4.5	7.8
0.00	12/11/01	2	2	2	2	4
0.00	01/24/02	13	2	4	4.5	2
0.00	02/26/02	2	1.8	13	4.5	2
0.01	05/06/02	2	2	2	13	2
0.00	05/08/02	13	4.5	2	2	4
0.05	11/12/02	23	22	33	110	46
0.00	12/10/02	17	23	17	4	2
0.00	12/19/02	4.5	17	49	49	4.5